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To investigate change in the general self concept of ability of educable mentally retarded special class students, four equally spaced interviews were conducted with 51 students (mean age 11.63) over a 2-year period. Pupils answered questions about their academic ability from the General Self-Concept of Ability Scale; scores showed an ascending linear trend over the last 1 1/2 years of their placement in a special class while those reassigned to the regular classes all declined in self concept of ability. Special class students did not significantly increase in their awareness that according to others' definitions they were failures. The students had a more negative orientation to the special class during their second year (p .05), but there was no significant change in academic aspirations. Special class placement was found to have a positive effect on the children's self concept of ability which was based on self comparison with class peers. Students may have internalized the negative attitudes of others about the special class and not about their ability. (LE)

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Grant No. 3-7-700052-3099

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CHAPTER I

THE PROBLEM

Introduction

Is change in educable mentally retarded (EMR)[1] students' self-concept of academic ability associated with their placement in a special class? This question was posed by Towne and Joiner[2] in an effort to explain why the more ideal educational setting of the special class has not resulted in improved academic performance by EMR students. They posited that placement in a special class has a detrimental effect on a student's perception of his academic ability and that the change in these self-perceptions might account for the failure of EMR students to achieve as well in special classes as might be expected. However, the results of their study indicated that special class placement has a positive effect on the EMR's academic self-concept rather than a negative one. This study, utilizing the same theoretical orientation, sample, and procedures, extends the research of Towne and Joiner in an effort to determine if the initial positive effect on the EMR's academic self-concept is only temporary and to explore explanations of changes in the academic self-concept of the EMR students.

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[1] "Educable Mentally Retarded" refers to ". . . mentally retarded persons who are capable of some degree of achievement in traditional academic subjects, such as reading and arithmetic. Also used to refer to those mentally retarded children who may be expected to maintain themselves independently in the community as adults, or to that group of mentally retarded obtaining IQ scores between 50 and 70, 75, or 80." (Rick Heber, "A Manual on Terminology and Classification in Mental Retardation," monograph supplement to *American Journal of Mental Deficiency*, LXIV (September, 1959).

[2] Richard C. Towne and Lee M. Joiner, *The Effect of Special Class Placement on the Self-Concept of Ability of the Educable Mentally Retarded Child*, Report of U. S. Office of Education Grant 32-32-0410-6001, College of Education, Michigan State University, East Lansing, Michigan, 1966, p. 78.

Background

Academic Achievement in Special Classes

A society's educational system tends to reflect the underlying political philosophy of that society. In a democracy, education reflects the belief that the state exists for the welfare of the individual. This implies an opportunity for all children to receive educational experiences which best facilitate their development.[1] Consistent with this philosophy has been the rise of public school special education classes for EMR children.

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[1] Samuel A. Kirk, Educating Exceptional Children (Boston: Houghton Mifflin Co., 1962), p. 3.

About fifty years after the first provisions for treatment of the EMR were developed by Dr. Samuel H. G. Howe, the first public school special class was opened.[1] For the next fifty years, a slow but steadily increasing number entered special classes. In 1922 there were 23,000 mentally retarded students in such classes, and by 1948 the enrollment had increased to 87,000.[2] In years that followed, the special class movement gained considerable impetus. By 1958 the number of students enrolled in such classes had increased to 218,000 and by 1963 to 324,000.[3] Considering the accelerating trend, today it is likely that approximately a million students could be found enrolled in special classes for the EMR.

A factor contributing to the dynamic growth of the special class movement has been greater public interest as shown by increased financial support, both locally and nationally. Closely aligned with the increased concern, if not a major factor in it, has been the increased acceptance of the belief that special educational experiences might positively alter the academic performance, personal development, and social adjustment of mentally retarded children. Research, however, has not provided unqualified justification for such faith.[1] That is, expanding programs backed by more and more funds have not proven their common sense promise. Reviews of studies on the efficacy of special class placement have concluded that EMR children placed in special classes do not exhibit greater academic achievement than those remaining in regular classes. In fact, these reviews consistently suggest that special class placement may even hinder academic achievement.[2] If there is any advantage to the special class it seems to be in personal and social adjustment.[1] However, conclusions about these advantages are qualified by statements such as: the differences are "slight and probably not particularly meaningful"[2] and "there is no suitable evidence."[3]

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[1] Leo Kanner, A History of the Care and Study of the Mentally Retarded (Springfield, Illinois: Charles C. Thomas, 1964), pp. 114-115.

[2] Elise H. Martens and Catherine Harris, "Statistics of Special Schools and Classes for Exceptional Children," Biennial Survey of Education in the United States, 1946-1948 (Washington: Federal Security Agency, Office of Education, 1948), p. 10.

[3] Rose M. Walker and William V. Grant, "Statistical Summary of Education" 1957-1958, Biennial Survey of Education in the United States, 1956-1958 (Washington: U.S. Dept. of H.E.W., Office of Education, 1962), p. 24.

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[1] See Howard L. Sparks and Leonard S. Blackman, "What is Special about Special Education Revisited: The Mentally Retarded," Exceptional Children, XXX (January, 1965), 242-247; Orville Johnson, "Special Education for the Mentally Retarded - A Paradox," Exceptional Children, XXIX (October, 1962), 62-69; Viola M. Cassidy, and Jeanette E. Stanton, An Investigation of Factors Involved in the Educational Placement of Mentally Retarded Children (Columbus: Ohio University Press, 1959); and Herbert Goldstein, James W. Moss, and Laura J. Jordan, "The Efficacy of Special Class Training on the Development of Mentally Retarded Children," U.S. Office of Education, Cooperative Research Project NO. 619 (Urbana, Illinois: The University of Illinois, 1965).

[2] In addition to the references just cited see: Samuel A. Kirk, "Research in Education," Mental Retardation: A Review of Research, eds. Harvey A. Stevens and

Numerous considerations have been explored in an effort to account for the discouraging results. Heber,[4] for example, notes that studies prior to 1964 suffer many methodological weaknesses. Among these are: investigators matched students who had already been placed in regular or special classes on a few attributes and important differences may have existed between the groups of students in regard to other variables; comparisons were made between children who had failed in regular classes for several years before being placed and children who

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Rick Heber (Chicago: The University of Chicago Press, 1964), pp. 57-99; and Leonard S. Blackman and Paul Heintz, "The Mentally Retarded," Review of Educational Research, XXXVI (February, 1966), pp. 5-36.

[1] See Johnson, op. cit., Sparks and Blackman, op. cit., and William I. Gardner, "Social and Emotional Adjustment of Mildly Retarded Children and Adolescents: Critical Review," Exceptional Children, XXXIII (October, 1966), 97-105.

[2] Johnson, op. cit.

[3] Gardner, op. cit., p. 97.

[4] Rick Heber, "Personality," Mental Retardation: A Review of Research, eds. Harvey A. Stevens and Rick Heber (Chicago: University of Chicago Press, 1964), pp. 143-174.

remained in regular classes; many of the children in studies had only been in a special class for one year; the "treatment" or delineation of a special class in regard to organization, teacher competency, and methods, for example, were not specified; and many studies improvised their own instruments which may have questionable reliability and validity.

Recognizing the limitations of the previous studies, Goldstein, Moss, and Jordan[1] conducted a four year study to determine the relative effects of the special class upon intellectual development, academic achievement, and social and personal adjustment. By using random assignment, specifying the treatment, using first graders, and extending the study for four years, many of the methodological difficulties of previous studies were eliminated. However, at the end of the four year period, there was not a significant difference in academic achievement between students in the regular classes and students in the special classes. The results concerning personal adjustment seemed to favor the experimental groups,[2] however, these findings "were not unequivocal."[3] Thus, probably the most definitive (well-designed) study to date[1] resulted in the same "negative findings" as previous studies.

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[1] Goldstein, Moss, and Jordan, op. cit.

[2] Ibid., p. 93.

[3] Ibid., p. 104.

Thurstone[2] has proposed a number of other possible explanations. Among these are: mentally handicapped children profit from the stimulation provided by normal children in the regular classroom; mentally handicapped children's motivation is reduced when they are placed in a special class; and the emphasis of the special class is not on academic achievement. Johnson[3] dismisses the first two alternatives and concurs with the latter explanation. He suggests that the regular class is academically oriented and that teachers in regular grades are continuously attempting "to bring all children up to grade level." Special education teachers, in turn, are the products of three decades of teacher preparation programs which have emphasized "disability" and the necessity for creating an environment for the development of emotional health rather than for academic achievement. The result is that there is less pressure and emphasis on learning than in the regular classes.[1]

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[1] Blackman and Heintz, op. cit., p. 12.

[2] Thelma G. Thurstone, An Evaluation of Educating Mentally Handicapped Children in Special Classes and in Regular Classes (Chapel Hill, North Carolina: School of Education, University of North Carolina, 1959).

[3] Johnson, op. cit.

Guskin[2] basically agrees with Johnson and provides a theoretical model for the position. Using role theory as the model, he suggests that a child being labeled as mentally retarded and treated by others as mentally retarded may have an undesirable impact on the behavior of the child. He notes, for example,

> One could hypothesize non-achievement orientation, dependency behaviors, and rebelliousness as patterns of behavior determined by previous and present interactions with people who have role concepts of the defective emphasizing inability, helplessness, and lack of control, respectively.[3]

In attempting to account for the non-achievement of EMR children in special classes, the basic question asked in this model is: "What effects does a knowledge of the person's defect have upon the behavior of those [teachers] interacting with him [EMR child], and what influence do these behaviors have upon the defective's [EMR child's] own responses [learning]?[1] Guskin does not specifically offer this model as an explanation of the lack of achievement of EMR children in the special class, although others using the basic model and related concepts have suggested it.[2]

---

[1] Johnson's statement about the orientation of the teacher seems to have at least two implications. One, a teacher may considerably alter the level of the material so that it makes minimal academic demands of the students. Two, a teacher may emphasize personal social adjustment, thus communicating in the interaction context that the student is not expected to learn very much and that excellence is not necessary. The two interpretations of his statement need not be considered as mutually exclusive as it is likely that either one or a combination of the two might explain the lack of achievement on the part of EMR children. However, Guskin, as this report, focuses on the latter explanation.

[2] Samuel Guskin, "Social Psychologies of Mental Deficiency," Handbook of Mental Deficiency: Psychological Theory and Research, ed. Norman Ellis (New York: McGraw Hill, 1963), pp. 325-352.

[3] Ibid., p. 332.

Erickson,[3] notes three propositions of role theory which are relevant to understanding the achievement of EMR students.

(1) For an EMR child to act intentionally to achieve, he must either see the task as appropriate behavior or perceive that significant others want him to achieve the task.

(2) The EMR's perception of the demands of his reciprocal role relationships will influence his behavior.

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[1] _Ibid._, p. 333.

[2] See Lewis A. Dexter, "Politics and Sociology of Stupidity in Our Society," _The Other Side: Perspectives on Deviance_, ed. Howard S. Becker (Glencoe, Illinois: The Free Press, 1964), pp. 37-49.

[3] Edsel L. Erickson _et al._, "A Social Psychological Study of the Educable Mentally Retarded: An Educational Research Application of Symbolic Interactionism," a paper presented at the national meeting of the Council for Exceptional Children, Portland, Oregon (1965).

(3) The EMR's school performance will generally conform to the perceived expectations of some significant other and perceived conditions of role demand.[1]

Towne and Joiner[2] use these propositions to explain special class EMR children's lack of achievement. They argue that being labeled as EMR and placed in a special class removes the child from the role of a regular class student and places him in the lesser role of a special class student. Accordingly, others, in particular special class teachers, expect and emphasize social adjustment, occupational adequacy, and minimal academic achievement. In response to these role expectations, the EMR child's self definition as a student may be adversely affected. And to the extent that self-concept of academic ability functionally limits academic accomplishments, the EMR student will not achieve as well as might otherwise be expected.

Theoretical Background

The Social System Perspective of Deviance

A recently formulated approach to mental deficiency is to view it as a social problem[3] within a social system perspective.[1] Unlike more conventional approaches which ask who is the deviant, where did he come from, how did he get that way, and is he likely to keep on being that way,[2] from a social system perspective deviance is viewed as a process of interaction between at least two kinds of people in a complimentary role relationship; those who commit a deviant act and the rest of society.[3]

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[1] *Ibid.*, pp. 4-13.

[2] Towne and Joiner, *op. cit.*, p. 12.

[3] See Lewis A. Dexter, "A Social Theory of Mental Deficiency," *American Journal of Mental Deficiency*, LXII (1958), 920-928. He writes that in contemporary sociology

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a social problem exists where a significant proportion of the people in a society or subsociety act as though they regard some existent behavior as undesirably abnormal (p. 921). Furthermore, Becker writes it is, "conduct which is generally thought to require attention of social control agencies - that is, conduct about which 'something should be done.'" Howard S. Becker (ed.), The Other Side: Perspectives on Deviance (Glencoe, Illinois: The Free Press, 1964), 9-10.

[1] See Dexter, op. cit. and Jane R. Mercer, "Social System Perspective and Clinical Perspective, Frames of Reference for Understanding Career Patterns of Persons Labelled as Mentally Retarded," Social Problems, XIII (Summer, 1965), 18-34. The original theoretical development is found in Howard S. Becker, Outsiders: Studies in the Sociology of Deviance (Glencoe, Illinois: The Free Press, 1963); Becker, The Other Side: Perspectives on Deviance, op. cit.; and John I. Kitsuse, "Society Reaction to Deviant Behavior: Problems of Theory and Method," Social Problems, IX (Winter, 1962), 247-257.

[2] Becker, The Other Side: Perspectives on Deviance, op. cit., p. 2. The traditional approach is classified by Cohen as the "Emphasis on the Actor." It focuses on the personality, the "kinds of people theories" and asks "what sort of person would do such a thing?". [Albert K. Cohen, Deviance and Control (Englewood Cliffs, N. J.: Prentice-Hall, 1966), pp. 42-43.] The social system perspective is classified as the interactionist approach.

[3] Becker, The Other Side: Perspectives on Deviance, op. cit., p. 2.

Deviance is not the quality of an act a person commits but rather a consequence of others applying rules and sanctions to the offender,[1] i.e., labeling the offender a deviant.

Becker[2] describes this process. There is a formal confrontation between the deviant suspect and the representatives of the community, some judgement is passed concerning the nature of the deviancy, and there is an act of social placement, assigning the deviant to a special role which redefines his position in society. The outcome of the process is twofold, both of which may be subsumed under what Merton has termed the "self-fulfilling prophecy."[3] On the societal level, in contrast to the ceremony by which an individual is ushered into the deviant position, there is no comparable public ceremony which marks his movement back out of the role and in the eyes of others he remains a deviate.[1] On the individual level, the interaction sequence follows the pattern described by Mead: social label, self-label, awareness of societal reaction, performance, social label, revision of self-label, performance of role implied by social label.[2] The result, in short, is that the exclusion of the deviant from participation in conventional groups and ordinary means of carrying on the routine of everyday life open to most people[3] causes a drastic and often irreversible change in his public identity which is eventually assumed as a self-image.[4] His performance, then, becomes congruent with the "others" definition of the deviant.

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[1] Becker, Outsiders: Studies in the Sociology of Deviance, op. cit., p. 9. He describes deviance as "not a property inherent in certain forms of behavior, it is a property conferred upon these forms by audiences which directly or indirectly witness them."

[2] Becker, The Other Side: Perspectives on Deviance, op. cit., p. 16.

[3] "The self-fulfilling prophecy is, in the beginning, a false definition of the situation evoking a new behavior which makes the originally false conception come true." Robert K. Merton, Social Theory and Social Structure (Glencoe, Illinois: The Free Press, 1957), p. 421.

This viewpoint has been seldom utilized in studying mental deficiency; to the author's knowledge only two writers, Lewis A. Dexter and Jane R. Mercer,[5] have used it. The position of these writers may be briefly summarized by two propositions forwarded by Dexter.

---

[1] Becker, The Other Side: Perspectives on Deviance, op. cit., pp. 16-17.

[2] Judith Lorber, "Deviance as Performance: The Case of Illness," Social Problems (1967), p. 309.

[3] Becker, The Outsiders: Studies in the Sociology of Deviance, op. cit., p. 34.

[4] Ibid., p. 32.

[5] See Lewis A. Dexter, "Politics and Sociology of Stupidity in Our Society," op. cit.; Lewis A. Dexter, "Research on Problems of Mental Subnormality," American Journal of Mental Deficiency, LXIV (1960), 835-838; Lewis A. Dexter, "A Social Theory of Mental Deficiency," op. cit.; Lewis A. Dexter, "Towards a Sociology of Mental Deficiency," American Journal of Mental Deficiency, LXI (1956), 10-16; Lewis A. Dexter, "A Note on Selective Inattention in Social Science," Social Problems, VI (1958), 176-182; and Mercer, op. cit., pp. 18-34.

> (1) In a society like ours which emphasizes as an end in itself formal demonstration of skill in the technique of symbolization and coordination of meanings, a far higher proportion of mental defectives are likely to be treated as cases of a social problem than would be treated in a society emphasizing some other set of values, for instance the capacity for survival or effective economic contribution.[1]
>
> (2) The self-image of the mentally defective in a society which stresses aptitude and intellectual achievement is likely to be negative because the looking glass self principle operates and they learn from their social contacts and experiences to look down upon and distrust themselves; in consequence difficulties are created, derived from the social role of the defective rather than from anything inherent in the bio-psychological nature of the defectives.[2]

In general, the study of deviance from the interactionist point of view has four major consequences for research:

(1) The focus of the research is on the interaction process.[3]

(2) The roles of people other than deviants are considered as they are involved in the interaction process.[4]

---

[1] Dexter, "A Social Theory of Mental Deficiency," _op. cit._, p. 922.

[2] _Ibid._, p. 924.

[3] Cohen, _op. cit._, pp. 102-106.

[4] Becker, _The Other Side: Perspectives on Deviance_, _op. cit._, p. 4.

(3) The consequences for the person to whom the label has been applied is studied. In particular, the individual's self-definition.[1]

(4) A "lack of sentimentality" must characterize the approach, as false impressions fostered by earlier theoretical positions may be corrected. That is, if deviance is viewed as arising from the interaction with others, changes in interaction may produce significant changes in behavior.[2]

For Dexter, the specific implication of this viewpoint for the study of mental retardation is:

> ...the central problem of research on the high-grade retarded may be to learn how to reverse or counteract the role status effects of having been treated as retarded.[3]

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[1] Ibid., p. 3.

[2] Becker, Ibid., p. 4. This is not only the case for the psychological or "Emphasis on the Actor" theories, but as notes it may also be true of sociological theories. He states current sociological theory views "the main organizational drift of the (social) system (as) centripetal; it acts to draw behaviors of actors toward (the) basic norms." Conduct not attracted or pressured toward the norms is "considered 'out of control,' which is to say it is deviant." Becker's contention is that because of the abstractness of norms, society needs to define deviant behavior in order to establish and maintain boundaries of acceptable behavior. "As a trespasser against group norms, he (the deviate) represents those forces which lie outside the groups' boundaries; he informs us, as it were, what evil looks like...And in doing so, he shows us the difference between inside the group and outside...." Becker, The Other Side: Perspectives on Deviance, op. cit., pp. 13-15.

[3] Dexter, Research on Problems of Subnormality, op. cit., p. 836.

Self and School Learning

Of the early contributors to the interactionist view of self, George Herbert Mead[1] has given the most detailed and systematic description.[2] An excellent summary of Mead's position has been prepared by Bernard Meltzer. He writes:

> The human individual is born into a society characterized by symbolic interaction. The use of significant symbols by those around him enables him to pass from the conversation of gestures which involves direct, unmeaningful response to the overt acts of others to the occasional taking of the roles of others. This role taking enables him to share the perspectives of others. Concurrent with role-taking, the self develops, i.e., the capacity to act toward oneself. Action toward oneself comes to take the form of viewing oneself from the standpoint, or perspective, of the generalized other (the composite representative of others, of society, within the individual), which implies defining one's behavior in terms of the expectations of others. In the process of such viewing of oneself, the individual must carry on symbolic interaction with himself, involving an internal conversation between his impulsive aspect (the "I") and the incorporated perspectives of others (the "ME"). The mind, or mental activity, is present in behavior whenever such symbolic interaction goes on - whether the individual is merely "thinking" (in the everyday sense of the word) or is also interacting with another individual. (In both cases the individual must indicate things to himself.) Mental activity necessarily involves meanings, which usually attach to, and define, objects. The meanings of an object or event is simply an image of the pattern of

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[1] George H. Mead, Mind, Self, and Society (Chicago: University of Chicago Press, 1934).

[2] Morton Deutsch and Robert M. Krauss, Theories in Social Psychology (New York: Basic Books, 1965), p. 183.

> action which defines the object or event. That is, the completion in one's imagination of an act, or the mental picture of the actions and experiences symbolized by an object, defines the act or the object. In the unit of study that Mead calls "the act," all of the foregoing processes are usually entailed. The concluding point to be made in this summary is the same as the point with which I began: Mead's concepts intertwine and mutually imply one another. To drive home this important point, I must emphasize that human society (characterized by symbolic interaction) both precedes the rise of individual selves and minds. This means, then, that symbolic interaction is both the medium for the development of human beings and the process by which human beings associate as human beings.[1]

But to study EMR students solely from Mead's writings would involve two important limitations. One, since the theory was developed in the absence of systematic empirical evidence, its constructs lack specificity.[2] And, two, there is no specific reference to school learning. These two deficiencies have been somewhat alleviated by the elaboration of the theory and its application to the school setting by Wilbur Brookover and his associates.[3]

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[1] Bernard Meltzer, The Social Psychology of George Herbert Mead (Kalamazoo, Michigan: Division of Field Services, Western Michigan University, 1959), pp. 25-26.

[2] Deutsch and Krauss, op. cit., p. 189.

[3] Wilbur Brookover, "A Social Psychological Conception of Classroom Learning," School and Society, LXXXVII (1959), 84-87; Wilbur Brookover and David Gottlieb, A Sociology of Education (New York: American Book Company, 1964); Wilbur Brookover, Jean LePere, Don Hamachek, Shailer Thomas, and Edsel Erickson, Improving Academic Achievement Through Students' Self-Concept Enhancement (Cooperative

Based on Median theory and two underlying assumptions, Brookover states three propositions as the foundation for his theory of school learning. The underlying assumptions are: one, neither the process nor the organic mechanisms necessary for learning culturally-required behavior are different from the processes and mechanisms for learning the types of behavior taught in the classroom; and two, a student learns to behave in the classroom in ways which he considers appropriate to himself (the definition of self as an object).[1] The propositions[2] are:

> (1) A functional limit on a student's ability to learn in school is set by his "self-concept of academic ability."[3]

Research Project No. 1636, U.S. Office of Education (East Lansing, Michigan: Bureau of Educational Research Services, College of Education, Michigan State University, 1965); Wilbur Brookover, Ann Patterson, and Shailer Thomas, The Relationship of Self-Images to Achievement in Junior High School Subjects, Cooperative Research Project No. 845, U.S. Office of Education (East Lansing, Michigan: Bureau of Educational Research Services, College of Education, Michigan State University, 1962); and Wilbur Brookover, Edsel Erickson, and Lee Joiner, Self-Concept of Ability and School Achievement, III, Cooperative Research Project No. 2831, U.S. Office of Education (East Lansing, Michigan: Human Learning Research Institute, College of Education, Michigan State University, 1967).

[1] Ibid., p. 44.

[2] These three propositions are a revision of the four which appear in the earlier statements of the position. Ibid.

[3] By "self-concept of ability" Brookover means "...the evaluation one makes of oneself in respect to the

(2) A student's self-concept of academic ability is acquired in interaction with his significant others through his perception of their "evaluations of his academic ability."

(3) A student's self-concept of academic ability is an "intervening variable" between his perceptions of others and his attempts to learn in school.

When related to EMR students, the Brookover orientation means that for an EMR child to act intentionally to achieve, he must see a task as appropriate behavior or perceive that significant others in his reciprocal role relationships want him to achieve the task.[1] This model for learning should not be interpreted to mean that biological differences, for example those often encountered in mental retardation, play no role in academic performance, only that the self-concept of ability is an intervening variable which mediates between the organic condition of the individual and the behavioral outcome. As Brookover writes:

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ability to achieve in academic tasks in general as compared with others." Brookover states: "Self-concept of academic ability refers to behavior in which one indicates to himself (publicly or privately) his ability to achieve in academic tasks as compared with others engaged in the same task." (Ibid., p. 8.)

[1] Erickson, op. cit.

> ...We postulate that the child acquires, by taking the role of the other, a perception of his own ability as a learner of various types of skills and subjects which constitute the school curriculum. If the child perceives that he is unable to learn mathematics or some other area of behavior, this self-concept of his ability becomes the functionally limiting factor of his school achievement. "Functional limit" is the term used to emphasize that we are speaking not of genetic organic limits on learning but rather of those perceptions of what is appropriate, desirable, and possible for the individual to learn. We postulate the latter as the limits that actually operate, within broader organic limits, in determining the nature or extent of the particular behavior learned.[1]

Others and School Learning

Although the model proposed by Brookover does take into account the influence of others on the behavior of the EMR child, it does not specifically predict what is expected to occur as the result of placement in a special class. In this regard, Goffman's "Cooling the Mark Out"[2] suggests a unique addition.

"Cooling the Mark Out" is an analysis of adapting to failure in role performance by interacting with others. Goffman notes three ways in which a person can lose a role: he can be promoted out of it, he can abdicate it, or he may be involuntarily deprived of it and made in return something that is considered as a lesser thing to be. The latter case is one which calls for a redefinition of the self as being removed from the role reflects unfavorably on the individual's capacity for it and in many cases is the ultimate proof of incapacity.[1] As Goffman writes, an individual "has defined himself as possessing a certain set of qualities and then proven...that he is miserably lacking in them."[2] The "cooling process," then, is one in which others help the individual to revise his self-definition and adapt to his new role.

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[1] Brookover and Gotlieb, op. cit., p. 469.

[2] Erving Goffman, "On Cooling the Mark Out," Psychiatry (1952), pp. 451-463.

Although the aspect of the interactionist model has been ignored in studying the effects of special class placement on EMR children, a process which parallels it has been studied by Burton Clark.[3] Clark notes that one alternative to failing unpromising junior college students and saving their self-images is to sidetrack them, to engage them in a "cooling process."[4]

> This type of student (those who do not demonstrate the ability which would enable them to transfer to a senior college) is handled by being moved out of a transfer major to a one or two-year program of vocational, business, or semiprofessional training.

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[1] Ibid., p. 454.

[2] Ibid., p. 452.

[3] Burton R. Clark, "The 'Cooling-Out' Function in Higher Education," Society and Self, Bartlett S. Stoodley ed. (New York: The Free Press, 1962), pp. 135-146. Also in American Journal of Sociology (May, 1960), 569-576.

[4] Ibid., p. 139.

> This calls for the relinquishing of his original intention, and he is induced to accept a substitute that has lower status both in college and society in general.[1]

In one junior college the process consists of five phases.

> (1) Low scores on pre-entrance tests lead poorly qualified students into remedial classes.
>
> (2) Counselors assist the students in choosing proper courses in light of their objectives, test scores, high school records, and test records from previous schools.
>
> (3) A special course designed to assist students in evaluating their abilities, interests, and aptitudes; in assaying their vocational choices in light of this evaluation; and in making educational plans to implement their choices is required of all students.
>
> (4) Poor achievement results in "need for improvement notices" and further conferences with a counselor. This directs the student to more advice and self-assessment.
>
> (5) Finally, poor achievement results in a probationary status. This procedure is not designed to rid the college of a large number of students, but to assist the student to seek an objective at a level on which he can succeed. An important effect is the killing-off of the lingering hope of the most stubborn latent terminal students.[2]

The first three steps of the "cooling process" in the junior college have a great deal in common with special education programs for the EMR. In both instances tests and other records indicate that a student is not fitted for the academic role. In both instances students are helped by others to set realistic vocational aspirations. Both the special class teacher and the counselor help preserve the self-image of the student by easing the re-definition process: the junior college teacher by stressing the respectability of the lesser role and the special class teacher by stressing role demands which emphasize minimal academic achievement, social adjustment, and occupational adequacy.[1]

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[1] Ibid., p. 140.

[2] Ibid., pp. 140-143.

Problem Statement

Rather than focusing on some physical attribute, the study of behavior from the perspectives just discussed examines characteristics of the individual which develop and are changed through interaction with others. To explain the inadequate school learning of EMR students in the special class, this means one views the EMR students in their reciprocal role relationships and explores how these relationships may counteract the positive effects of the more ideal educational setting.

The research reported here investigates one facet of these relationships, the student's perception of his ability to learn. It asks:

(1) Does the initial positive effect of special

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[1] These expectations are in accord with typical educational definitions of EMR students. Kirk, op. cit., p. 105.

class placement on the EMR's academic self-concept decline during the second year in the class?

(2) What conditions associated with the special class account for the change in the EMR's academic self-concept?

The research's significance is threefold. Since the constructs from symbolic interaction theory have been demonstrated to be relevant in understanding the academic achievement of students in regular classes, their application to the special class setting may provide a theoretically based explanation for the lack of optimal achievement shown by special class EMR students. Two, it explores conditions associated with change in academic self-concept which, if identified, might be altered to facilitate the learning of EMR students in special classes. Finally, it examines the generality of the basic tenets of Brookover's social theory of learning.

CHAPTER II

OBJECTIVES

General Purpose

This study is the second stage of a research program whose overall purpose is to develop a theoretically based explanation for the less than hoped for academic achievement by special class EMR students. In particular it proposes:

(1) to investigate change in the General Self-Concept of Ability (GSCA) of second year EMR special class students;

(2) to refine the initial study's attempt to understand how certain conditions associated with special class placement effect change in General Self-Concept of Ability (GSCA).

It must be emphasized that concern here is not with whether the EMR's self-concept is either abnormal or healthy[1] but with examining and making explicit conditions and influences which affect it as a functionally limiting variable in academic achievement.

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[1] Calvin C. Nelson, "Developing a Positive Self-Concept in the Mentally Retarded," Mental Retardation, I (February, 1963), 28-31.

Hypotheses

To enhance the reader's grasp of the intent of the hypotheses under investigation, prior to stating them a brief listing of pertinent findings from the first year's study will be made.

(1) GSCA scores of EMR students exhibit a significant quadratic trend over their first year in the special class. These data, however, did not support the a priori redefinition model as the GSCA scores rose at placement and continued to rise until March, and then began to fall.

(2) Neither academic aspirations nor academic expectations of first year EMR students demonstrated a significant descending linear trend. They fell from June 1965, through December and then rose between December 1965, and June 1966.

(3) Teachers became an academic significant other to an increasing proportion of EMR students during their first year in the special class.

(4) First year EMR students did not show significant change in the proportion of positive replies to the question, "How do you like this class?"

(5) No significant change was noted in the proportion of first year EMR students naming the special class in reply to the question, "Would you rather be in this class or the one you were in last year?"

As the discussion and statement of the hypotheses entails certain time ordered relationships, numerical subscripts have been utilized to indicate the various times when the interviews were conducted. The first six subscripts refer to the interview schedule followed by Towne and Joiner while the last four indicate the times when information was gathered during the current study.

Subscript	Month
1	May, 1965
2	June, 1965
3	September, 1965
4	December, 1965
5	March, 1966
6	June, 1966
7	September, 1966
8	December, 1966
9	March, 1967
10	June, 1967

The following hypotheses are stated as research hypotheses, not as null hypotheses. For clarity they are stated in both literary and operational form.

Hypothesis I. Change in the academic self-concept of the special class EMR students will be characterized by a descending linear trend from March 1966 to June 1967.

H_1: $GSCA_5 > GSCA_6 > GSCA_7 > GSCA_8 > GSCA_9 > GSCA_{10}$

Operationally, academic self-concept is defined as a score on Brookover's General Self-Concept of Academic Ability Scale (GSCA).

Hypothesis II. Special class EMR students will make more derogatory comments about their class in June 1967 than in June 1966.

H_1: $\mu_6 > \mu_{10}$

Operationally, "derogatory comments about their class" is defined as students' statements that identified their class by something other than their teacher's name, room number, grade, or "the special class" when responding to the following questions:

1. What class are you in?
2. What do you call your class?
3. What do kids in your room call your class?
4. What do kids from other rooms call your class?

Hypothesis III. Teachers' evaluations of special class EMR students' academic ability will be perceived more positively by those students in March 1966 than in June 1967.

H_1: $\mu_5 > \mu_{10}$

Operationally, a student's perception of the teacher's evaluation is defined as a score on Brookover's Perceived Evaluation of Teachers Scale.

Hypothesis IV. Special class EMR students will make more unfavorable comments about the special class in June 1967 than in June 1966.

H_1: $\mu_6 > \mu_{10}$

Operationally, unfavorable comments about the special class is defined as (1) statements by EMR students that they do not like their class when asked the question, "How do you like this class?," and (2) answers that they would rather be in a regular class when asked the question, "Would you rather be in the special class or a regular class?."

Discussion of Hypotheses

In their pilot study Towne and Joiner hypothesized that the EMR GSCA scores would exhibit a concave upcurve trend during the first year of special class placement. They reasoned that the EMR student would perceive assignment to the special class as ultimate proof of failure in the academic role. At placement then, his view of self as a student as compared with other students would drop. Soon, however, surroundings provided by the special class teacher and the EMR students would supply the student with a favorable framework for revising his self definition upward, and an increase in GSCA would be observed.

But the data did not support the a priori model since GSCA scores rose from placement until March and then fell in June. Two explanations may be given for Towne and Joiner's failure to predict the initial rise in GSCA following placement. One, the model is invalid in that a decrease in GSCA is not necessitated because placement in a special class is not ultimate proof of academic failure to EMR students. Two, the model is valid but there is a time lag between placement and the EMR's realization that others define them as academic failures. Two factors which may contribute to the time lag are: (1) the impact of the EMR students' perception of the special class teacher's positive evaluation of their academic ability; and (2) change in referent group[1] to whom the EMR can more favorably compare their academic ability.

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[1] Several papers have been directed at clarifying the ambiguous usage of the reference group concept. [See Harold H. Kelly, "Two functions of Reference Groups," Readings in Social Psychology, eds. T. M. Newcomb and E. L. Hartley (New York: Henry Holt and Company, 1952), pp. 410-414; Tamotsu Shibutani, "Reference Groups as Perspectives," American Journal of Sociology, LX (1955), 563; Robert K. Merton, Social Theory and Social Structure (London: The Free Press of Glencoe, 1964), p. 238.] The papers have agreed in distinguishing at least two major types of reference groups; the normative type, one whose perspective is assimilated in terms of attitudes, values, standards of conduct, etc., and the comparison type, one

With the first factor, it was reasoned that since special class students interact more directly with an academic significant other, the special class teacher who is typified as more understanding and less demanding than regular class teachers, they should perceive that "others" evaluate their abilities more positively in the special class than in the regular class. And the perception should be reinforced by an increasing success in learning experiences. Furthermore, since the members of the special class will be less academically skilled than regular class students, to the extent they become the comparative referent for EMR self-evaluation as a student, GSCA scores should rise.

Hypothesis I, then, explores whether or not EMR students do lower their self definitions as students after a period of time in the special class. Hypothesis II investigates whether there is a time lag between placement and the realization by the EMR that they are failures as students. Hypothesis III examines the change in EMR

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which provides a frame of comparison relative to which the individual evaluates himself. Specific usage of reference group concept in this study is in terms of the latter type, although the former is implicit in Brookover's theoretical propositions. When he argues that the academic self-concept is a self-attitude that develops through the perceived evaluation of significant others, what is implied is that the individual assimilates the attitudes of others toward himself, i.e., the significant others are a normative referent group.

students' perception of teachers' evaluations of their academic ability,[1] and Hypothesis IV tests the referent group self-aggrandizement explanation.

Questions

Methodological:

(1) Did repeated interviewing affect responses to the GSCA Scale during the first year of the study?

(2) Did repeated interviewing affect responses to the GSCA Scale during the second year of the study?

(3) Did different interviewers elicit different responses to the GSCA Scale?

Hypotheses Related:

(4) What happens to the GSCA scores of special class EMR students who have been reassigned

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[1] The selection of the "perceived evaluation of teachers" as a possible explanation of change in GSCA is some what at odds with Brookover's general theory of self-concept. His position is that the most significant antecedent condition of academic self-concept is the expectations of the parent, i.e., the perceived evaluation of the parents. However, perceived teacher evaluation was selected as Towne and Joiner had found both a significant trend in the increased mention of teachers as academic significant others by the EMR students and higher correlation between PET and GSCA than reported in Brookover's research. This suggests that the role of the teacher regarding academic self-concept may be more important to students in special classes than to students in regular classes.

to regular classes?

(5) Is there a particular set of items which account for the observed change in GSCA scores?

(6) Do special class EMR students answer differently when asked to respond to the GSCA Scale items in terms of regular class students than when asked to respond to the items in terms of special class students?

(7) Do differences in value orientations of teachers affect changes in special class EMR students' responses to the GSCA Scale?

Others:

(8) Do the academic aspirations of special class EMR students change during their second year in a special class?

(9) Do the academic expectations of special class EMR students change during their second year in a special class?

(10) Do changes in the special class EMR students' perception of how parents of friends evaluate their academic ability correspond to changes in GSCA?

Discussion of Questions

A crucial biasing agent in this study's design is the possibility that repeated interviewing, different interviewers, or a combination of the two, were, in fact, responsible for the observed change in GSCA. Before interpreting the data, then, it is imperative that both interviewer and repeating testing effects be assessed.[1] To do this, the three methodological questions will be investigated.

Questions four through seven are related to the main topic of this research. The question about change in GSCA of EMR special class students reassigned to regular classes was designed to provide additional evidence that conditions in the special class are sufficiently different from those in the regular class to bring about changes in academic self-concept.

Question five is posed to provide supplementary information concerning the referent group explanation of change in GSCA. Patterson,[2] for example, through a factor analysis of the GSCA Scale found a present time oriented factor and a future time oriented factor. If factor analysis of the present data reveals the same factors and if one of them can be shown to be responsible for the change in GSCA scores, additional insight will be gained into differences between special and regular classes as they affect students' self-concept of academic ability.

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[1] Eugene Webb, Donald T. Campbell, Richard D. Schwartz, and Lee Sechrest, Unobtrusive Measures: Non-Reactive Research in the Social Sciences (Chicago: Rand McNally and Company, 1966), 12-23.

[2] Ann Patterson, "Reliability and Validity of Self-Concept of Ability Scale," in Brookover, Erickson, and Joiner, op. cit., p. 169.

Question six also examines the referent group explanation but by a method employed by Rodee and Alonso.[1] They found that blind students responded differently to the GSCA Scale items depending on the referent group to whom they were instructed to compare themselves. If the same holds true for EMR students, additional information will be gained concerning referent influences upon change in GSCA.

Question seven is another approach to examining the influence of teachers on changes in academic self-concept. As Fine and Caldwell[2] suggest, it may be that the special teacher's lack of emphasis on academic subject matter provides the EMR students with different standards to use in deriving their definitions of academic ability.

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[1] Burt Rodee and Lou Alonso, Abstract of a paper presented at the Council for Exceptional Children Meeting, St. Louis, Missouri, 1967.

[2] Marvin J. Fine and Thomas Caldwell, "Self Evaluation of School Related Behavior of Educable Mentally Retarded Children - A Preliminary Report," Exceptional Children, XXXIV (January, 1967), 324.

Questions eight and nine are posed as in the pilot study. Changes in these variables were considered as indices of the "cooling process." Question ten examines if EMR students' perceived evaluation of those in reciprocal role relationships other than the teacher can account for changes in GSCA.

CHAPTER III

RELATED LITERATURE

Introduction

Although considerable research has been conducted to explore patterns and correlates of self-concept in normal populations, until recently, only a few self studies concerned with the mentally retarded have been reported. Heber, for example, as recently as 1964 could only locate two "self" studies dealing specifically with the mentally retarded. He concluded:

> Despite the importance of global concepts of 'feelings about one's self' in contemporary personality theory, one can only speculate about the self-concept of the mentally retarded.[1]

Fortunately, since 1964 there has been an increase in the number of self studies involving the mentally retarded. And even though much more needs to be done before definitive statements can be made, at minimum there is a strong move away from speculation to empirically founded understanding. The present review will focus on this developing body of research. In addition, it will consider research concerned with assessing change in the self-concept of students placed in low ability groups.[1]

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[1] Rick Heber, "Personality," Mental Retardation: A Review of Research, ed. Harvey A. Stevens and Rick Heber (Chicago: University of Chicago Press, 1964), pp. 143-174.

The review will organize these studies around three themes: (1) general studies of the self-concept of the mentally retarded; (2) the effects of placement in a special class on the self-concept of the mentally retarded and other low ability students; and (3) the relationship between self-concept and achievement.

The Self-Concept of the Mentally Retarded

A number of studies of the mentally retarded's self-concept are based on a series of reports by George Guthrie, Alfred Butler, Leon Gorlow, and their associates. The basic premises underlying the series were: (1) the retarded person learns a set of attitudes about himself which are in turn reflected in his behavior; and (2) the self-concept of an individual is not unidimensional but consists of a constellation of self-attitudes.[2] In their initial report,[1] they describe the development of a 150 item questionnaire, the Laurelton Self-Attitude Scale (LSAS), designed to assess self-attitudes in the areas of physical appearance, physical health, interpersonal relationships with peers, and inter-personal relationships with non-peers. As part of the study, an inverse factor analysis (the analysis of a subject by subject correlation matrix rather than a variable by variable one) was performed on responses of institutionalized and non-institutionalized female retardates. The analysis revealed seven groups of subjects or seven different outlooks. Three positive themes were: "There's nothing wrong with me, I do as well as others do, and I don't give trouble."[2] And four themes of failure were: "I act hatefully, I am shy and weak, I am useless, and nobody likes me."[3] They concluded that each factor or group represents a different hypothetical organization of self-attitudes and that treatment programs should "take into account

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[1] No claim is made that children in low ability groupings are the same as children in special classes, but within the theoretical framework of this study, placement of a child in either type of grouping represents a change in status to a lesser role and the repercussions of the two types of placement may be similar.

[2] In the Guthrie research reports self attitude, self, and self acceptance are all defined within a phenomenological framework. That is, they deal with the

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subject's view of himself and of the attitudes of others toward him as they are consciously communicated by the subject.

[1] George M. Guthrie, Alfred Butler, and Leon Gorlow, "Patterns of Self-Attitudes of Retardates," American Journal of Mental Deficiency, LXVI (September, 1961), 222-229.

[2] *Ibid.*, p. 227.

[3] *Ibid.*, p. 228.

whether a retardate feels weak and shy, or insists that nothing is wrong."[1] Six factors similar to the ones above were found in a replication.

To supplement the first study, which was primarily concerned with expressed or real self-attitudes, a second was conducted to investigate ideal self-attitudes.[2] The need for this study was based on the theoretical position of Carl Rogers who views psychological adjustment as deriving from discrepancies between real and ideal self. In the study the responses of 79 female retardates (CA range 14-18, IQ range 50-85) on a modification of the LSAS (50 items) were factor analyzed. The analysis revealed five interpretable factors: a general dimension of personal worth and physical health, and four which represented modes of getting along with people.

A third study in the series was directed at identifying some of the major dimensions of both self-attitudes and ideal selves.[3] The sample consisted of 96 female retardates ranging in age from 14-26 and in IQ from 50-80.

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[1] *Ibid*., p. 229.

[2] Janet T. Kniss *et al*., "Ideal Self Patterns of Female Retardates," *American Journal of Mental Deficiency*, LXVII (September, 1962), 245-249.

[3] George M. Guthrie *et al*., "Non-Verbal Expression of Self Attitudes of Retardates," *American Journal of Mental Deficiency*, LXIX (July, 1964), 42-49.

The procedure of the preceding two studies was modified so that instead of answering the LSAS items, the subjects responded to 50 pairs of pictures according to which was "more like them." This modification was incorporated as the investigators felt that evidence about the underlying dimensions of self-attitudes could be found in a manner which was less subject to response biases or hindered by the mentally retarded's limited ability to express themselves. The factor analysis revealed that self-attitudes were "...organized around themes of popularity, acceptability to the opposite sex, compliance, friendliness with peers; and on the negative side theme of being ignored, actively rejected, dominant, giving but not receiving, and being angry with peers."[1] When asked to respond to the questions in terms of "the best thing," "the ideals centered around themes of self-confidence, popularity, compliance, receiving help, being helpful, loyal, assertive and aware of others, and avoiding involvement with peers."[2] The investigators concluded that the mentally retarded act more to protect themselves from painful rejection, probably because of past abuse, rather than to gain approval through achievement.

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[1] Ibid., p. 48.

[2] Ibid.

The use of the ideal-self and self-attitude scores by Guthrie and his associates deviates somewhat from the usual analysis of such scores in that they ignored or did not report an analysis of the self-ideal discrepancy scores. McAfee and Cleland,[1] however, have carried out such an analysis. They administered the Adapted Bills Index to 30 adjusted and 30 maladjusted male retardates whose ages ranged from 14 to 22. The mean IQ for the adjusted group was 63 and for the maladjusted group it was 63.4. Results showed the self-ideal discrepancy scores of the adjusted did not differ from the self-ideal discrepancy scores of the maladjusted. Additional analyses indicated a significant difference between the ideal-self and self-concept scores for each group but no difference between the adjusted and maladjusted self-concept scores. Based on this data, the authors concluded that since self-concept was largely determined by the way an individual perceives other people's reaction to his behavior, apparently society responds stereotypically to most educable mentally retarded males rather than reacting to each retardate as a unique individual. In addition, from a correlation of

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[1] Ronald O. McAfee and Charles C. Cleland, "The Discrepancy Between Self-Concept and Ideal-Self as a Measure of Psychological Adjustment in Educable Mentally Retarded Males," American Journal of Mental Deficiency, LXX (July, 1965), 63-68.

.34 between the discrepancy score and IQ, the authors suggested that males with higher IQs are more cognizant of the discrepancy between their and others' capacities.

The positive correlation between IQ and discrepancy score in conjunction with the non-significant correlation between ideal-self and IQ, also found in the study by McAfee and Cleland,[1] agrees with conclusions of other investigators who suggest that the mentally retarded have unrealistic self-concepts. Ringness,[2] for example, studied the differences among the self-concepts of high and "average" children in regular classes and low intelligence children in special classes. The results of the first year showed that high IQ children rated themselves the highest, children in special classes next, and average children the lowest. He also found that children in the special class were most discrepant in their estimation of their ability when compared with their actual success. Analysis during the second year of the study yielded similar results. Ringness concluded that mentally retarded children tend to be over rather than under confident.

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[1] Ibid., p. 66.

[2] Thomas A. Ringness, "Self-Concept of Children of Low, Average, and High Intelligence," American Journal of Mental Deficiency, LXV (1961), 453-461. The Ringness instrument for measuring self-concept is an eight item Likert scale with four items directly related to academic judgements. Furthermore, Ss were asked to use their classmates as a framework for making the necessary comparisons. Obviously the Ringness instrument is quite similar to the Brookover GSCA scale used herein. In this regard it is of interest to note Heber's feeling that the Ringness approach to self-concept assessment was "idiosyncratic." (Heber, op. cit., p. 147.) Apparently Heber views self in global terms in accordance to the psychologically oriented operationalizations most often found in research literature. It must be emphasized, however, that Ringness's particularized approach to self-concept, the approach also of this study, is in accord with acceptable operational procedures. (Manford Kuhn, "Self," A Dictionary of the Social Sciences, eds. Julius Gould and William L. Kolb (New York: The Free Press, 1964), 630-631.

Results of a study by Curtis[1] support the findings cited above. Using his own instrument, he found the self-concept of mentally retarded school children did not differ from the self-concept of average ability students, high ability students, or a group of regular class students of the same chronological and mental age.

Fine and Caldwell[2] used a different procedure but arrived at a similar conclusion. They asked a sample of elementary special education students (EMR) to rate their ability in comparison to special class students and then to compare themselves with regular class students. The results showed that EMR students rated themselves average or above average in comparison to both special class students and regular class students.

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[1] Leonard T. Curtis, "A Comparative Analysis of the Self-Concept of the Adolescent Mentally Retarded in Relation to Certain Groups of Adolescents," Dissertation Abstracts, XXV (1965), 2846-2847.

[2] Fine and Caldwell, op. cit., p. 324.

All studies, however, have not found the mentally retarded's self-concept scores to be higher or similar to other groups. Piers and Harris,[1] for example, developed a self-concept scale from Jersild's collection of children's statements about what they liked and disliked about themselves. While validating the scale, they compared the responses of 88 institutional female retardates (mean age 16.8 and IQ 69.6) to those of public school children in Grades 3, 6 and 10. The results showed that the retardates had lower self-concepts than any other group. Perron's study supported Piers and Harris's finding.[2] In his study, 63 mentally retarded boys (aged 14-17) were asked to estimate their probable success on each of seven games. When the responses of the retarded were compared to the responses of 194 normal children (aged 6-14), the retarded were found to be significantly more pessimistic in their estimates. Similarly, Borg[3] found that regardless of grouping procedures, ability vs. random, the slowest students had lower self-concepts than either average or bright students.

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[1] Ellen V. Piers and Dale B. Harris, "Age and Other Correlates of Self-Concept in Children," Journal of Educational Psychology, LV (1964), 91-95.

[2] R. Perron, "La Genése de la Representation de Soi. Les Orientations Actuaelles de la Recherce [Genesis of the Representation of the Self. Present Day Orientations of Research]," Entance, IV-V (1964), 357-376.

[3] Walter R. Borg, Ability Grouping in the Public Schools (Madison, Wisconsin: Dembar Educational Research Services, Inc., 1966), p. 66

In two of the above three studies one might question the validity of the comparisons as there were age differences between the mentally retarded and normal sample. Although in most studies with a retarded population age has not been related to self-concept, one still cannot view the results without some reservations. In addition, the study by Piers and Harris used institutionalized retardates rather than those in public schools. As a study by Guthrie, Butler, and Gorlow[1] has shown institutionalized retardates have lower self-attitudes than non-institutionalized retardates, it might be incorrect to conclude from the data of Piers and Harris that retardates in school differ in self-concept from other children. But these limitations might be relatively meaningless, particularly when taking Borg's results into account. In effect, this would mean that no generalization about the self-concept of the mentally retarded can be made.

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[1] George M. Guthrie, Alfred Butler, and Leon Gorlow, "Personality Differences Between Institutionalized and Non-Institutionalized Retardates," American Journal of Mental Deficiency, LXVII (January, 1963), 543-548.

Class Placement and Self-Concept

Basically there have been two kinds of studies conducted to ascertain the effects of class placement on self-concept of slow students. One type has compared students in special classes to those in regular classes while the other has studied special students according to the time they have been in the class. The rationale for the latter is if the special class has a positive effect on the self-concept than those who have been in the class longer should have a more positive view of themselves.

Studies of the first type have reported conflicting results. On the positive side, Drews[1], with a sample of ninth grade English students, found that low ability students in a homogeneous grouping responded more positively to the Ability Self-Concept Rating and the Concept of Self as a Learner Scale than similar students in heterogeneous groups. The first instrument consisted of a question which asked the student to compare his ability with that of his classmates, and the second instrument was a 20 item scale developed from Bills' Index of Adjustment and Values.

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[1] Elizabeth M. Drews, The Effectiveness of Homogeneous and Heterogeneous Ability Grouping in Ninth Grade English Classes with Slow, Average, and Superior Students, unpublished manuscript (Michigan State University, 1962).

Goldberg, Passow, and Justman partially confirmed Drew's results.[1] They compared self-concepts of students in a number of different grouping procedures. Students were categorized by five levels of ability and then assigned to classrooms so that the proportion of students from each ability level varied from classroom to classroom. The analysis revealed that the lowest ability students made the highest self-evaluations when the classroom was composed of only low ability students. Higgins,[2] in comparing children who attended a special school to those attending a regular school, also found that students in a homogeneous grouping perceived themselves more positively than those in other types of groupings.

On the negative side, Mann[3] found that of a group of fifth grade students who had been placed in low ability groups upon entering the first grade, students in the low ability group made more negative responses than any other group. A negative or positive response was determined by answers to the questions, "Which fifth grade are you in?" and "Tell me how you happen to be in this particular fifth grade rather than some other group." Borg[1] questioned whether responses to Mann's questions really were indices to self-concept and suggested instead that the above results merely confirmed the fact that the students do know what ability group they are in. But the results of Borg's study confirmed Mann's findings. He administered the Bills' Index of Adjustment and Values to students in two comparable school districts, one which had homogeneous grouping and one which did not. Although comparisons were made among several different sub-samples, in general, low ability students in homogeneous groups had lower self-concepts than those in heterogeneous groups. In addition, it is interesting to note that while most of the students' self-concept scores rose over a period of time, the self-concept of low ability students in homogeneous classrooms did not. These results, coupled with the observation that students who were reassigned to lower ability classifications showed a decrease in self-concept, indicate that in Borg's sample homogeneous grouping for low ability students has a negative effect on self-concept.[2]

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[1] Miriam L. Goldberg, A. Harry Passow, and Joseph Justman, The Effects of Ability Grouping, unpublished manuscript (Teachers College, Columbia University, 1961).

[2] L. C. Higgins, The Self-Concepts of Mentally Retarded Adolescents, unpublished B. Litt. thesis (University of New England, 1962).

[3] Maxine Mann, "What Does Ability Grouping Do to the Self-Concept?", Childhood Education, XXXVI (1960), 357-360.

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[1] Borg, *op. cit.*, p. 44.

[2] *Ibid.*, pp. 74-75.

Additional support for the negative effects of special class placement on self-concept is reported by Meyerowitz.[1] In his study, students were randomly assigned to a special class or a regular class on entering the first grade. At the end of the first year, the Illinois Index of Self-Derogation was administered to the two groups. The results showed that special class placement had a negative effect on self-concept. Another study by Bacher[2] showed neither positive nor negative differences between slow learners in a special class and slow learners in regular classes.

Studies concerned with assessing the relationship between self-concept and time spent in a special class have produced more consistent results. Mayer[3] categorized 98 junior high special education students according to whether they had been in the special class 0-3 years, 4-6 years, or 7-9 years. Both the Children's Self-Concept Scale by Lipsitt and The Way I Feel About Myself by Piers and Harris were administered to the sample. The resulting analyses of both scales showed no relationship between length of time in the special class and self-concept. Both McMillan[1] and Ringness[2] found similar results.

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[1] Joseph H. Meyerowitz, "Self Derogations in Young Retardates and Special Class Placement," Child Development, XXXIII (1962), 443-451.

[2] Jesse H. Bacher, "The Effect of Special Class Placement on the Self-Concept, Social Adjustment, and Reading Growth of Slow Learners," Dissertation Abstracts, XXV (1965), 7071.

[3] C. Lamar Mayer, "The Relationship of Early Special Class Placement and the Self-Concepts of Mentally Handicapped Children," Exceptional Children (October, 1966), 77-81.

Self-Concept and Achievement

For those primarily concerned with the academic achievement of the mentally retarded, the most crucial self-concept research would seem to be that which concerns itself with the relationship between self-concept and learning. Although evidence has accumulated to establish the positive nature of this relationship in normal populations,[3] particularly by those investigators restricting their operational definitions to an academic self-concept,[4] an important question is whether this relationship is maintained in a group like the mentally retarded who exhibit a relatively homogeneous achievement pattern. Five studies were located which offer some enlightenment on this question. Three of the studies were essentially correlational while two used an experimental paradigm.

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[1] Frank McMillan, "A Study of the Relationships of Selected Subject and Situational Variables to the Social Adjustment of Intellectually Retarded Adolescents," Dissertation Abstracts, XXV (1965), 5742-5743.

[2] Ringness, op. cit.

[3] See, for example: R. J. Andrews, "The Self-Concept and Pupils with Learning Difficulties," The Slow Learning Child, 13 (#1, July, 1966), 47-51. and J. W. Staines, "The Self-Concept in Learning and Teaching," Australian Journal of Education, VII (March, 1963).

[4] Brookover, et al., op. cit.

A study by Snyder, Jefferson, and Strauss[1] found a positive relationship of personality variables in general, and self-concept in particular, with academic achievement. Their procedure was to match 52 urban Negro special education students so that they had two groups of 26 subjects with equal IQs but different in reading ability levels. Self-concept scores for the groups were derived from items on the California Test of Personality that appeared to the authors to be "obviously self-concept oriented." When the scores of the groups were compared, it was found that the high readers had better self-concepts than the low readers.

Because of the limited nature of the first study, Snyder[2] used essentially the same procedure with 170 special education subjects who came from a wider variety of backgrounds than the first sample. This sample was representative of the following groups: Negro and Caucasian, Catholic and non-Catholic, Public and Private School, male and female, rural and urban. Self-concept in this study was determined by the LSAS and achievement by reading scores on a variety of standardized achievement tests. As in the first study, a significant difference in self-concept was found between high and low achieving groups. The results of the two studies by Snyder supported earlier correlational research conducted by Gorlow et al.[1] They had found a significant positive correlation between self-concept, as measured by the LSAS, and achievement in a sample of 164 institutionalized female retardates. This correlation remained significant when the effects of intelligence were partialled out.

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[1] R. T. Snyder, W. Jefferson, and R. Strauss, "Personality Variables as Determiners of Academic Achievement of the Mentally Retarded," Mental Retardation, III (1965), 15-18.

[2] Robert T. Snyder, "Personality Adjustment, Self Attitudes, and Anxiety Differences in Retarded Adolescents," American Journal of Mental Deficiency, LXXI (July, 1966), 33-41.

In self-concept theory, the basic premise is that the self-concept of an individual will affect his behavior. In terms of school learning, this means that students with a high self-concept are more likely to learn than those with low self-concepts. A problem with the correlational studies cited above is that the observed relationship may be interpreted as achievement being the antecedent to self-concept rather than it being at least partially a consequence. To deal with this argument, the following two studies use an experimental paradigm to support the position that self-concept is an antecedent condition.

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[1] Leon Gorlow, Alfred Butler, and George M. Guthrie, "Correlates of Self-Attitudes of Retardates," American Journal of Mental Deficiency, LXVII (January, 1963), 549-555.

Based on scores obtained on LSAS, Hardy[1] divided 56 mentally retarded students (ages 13-4 to 16-9 and IQs from 50-80) into a high self-concept group and a low self-concept group. The subjects were given a paired associates task consisting of 12 paired pictures of common objects. Learning scores were derived in two ways: (1) the number of trials needed to master the learning task; and (2) the number of errors made in mastering the list. The results indicated that subjects with higher self-concepts needed fewer trials and made fewer errors in mastering the list. The two groups did not differ in IQ or CA.

Wink[2] conducted a similar study with 72 institutionalized females ranging from 45-80 in IQ, 15-22 in CA, and 1.5 to 6.0 in grade level. The sample was divided into a high self-concept group and a low self-concept group based on scores from the LSAS. The two groups were subdivided and assigned to three treatment conditions:

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[1] Hubert A. Hardy, "The Relationship Between Self-Attitudes and Performance on a Paired-Associates Learning Task in Educable Retardates," Dissertation Abstracts, XXVII (1967), 1657.

[2] Charles F. Wink, "Mental Retardation and Learning under Symbolic Reinforcement in View of Self-Acceptance," Dissertation Abstracts, XXIII (1963), 2430-2431.

positive symbolic reinforcement, negative symbolic reinforcement, and negative-positive symbolic reinforcement.[1] The results indicated that the high level self-acceptance group did significantly better than the low self-acceptance group on the task, and the widest discrepancy between the treatments occurred with the low self-esteem group which did much more poorly under negative and negative-positive reinforcement than under positive reinforcement conditions.

Self-Concept

Of the preceding studies, the ones which are most relevant to the major hypothesis of this study are: (1) those which compared the self-concept of normal samples to that of the mentally retarded; and (2) those investigating the effects of placement in a special class. These studies, however, have not produced consistent results. Although one could successfully search for differences among the studies in terms of sample, procedure, or other variables, the most telling difference involved the studies' instrumentation; every time discrepant findings occurred, the investigators had used different instruments to obtain self-concept ratings.

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[1] A flashing green light was the positive reinforcement and a raucous buzzer was the negative reinforcement.

Finding conflicting results where different instruments have been used is not uncommon in self-concept studies with normal populations,[1] and as such, the differences might be attributed to the lack of comparability of the instruments, rather than to some other phenomena. Research on the interchangeability of self-concept instruments has not found that they share a large common variance. As Crowne and Stevens state:

> ...tests of self-acceptance...which are based on different construct systems and in the development of which different procedures and items have been employed are not equivalent in the absence of empirical demonstration of their relationship....[2]

The question of which self-concept instruments are most likely to be similar has been in part explored by Stratton and Spitzer[3] and Viney.[4] Regarding procedure, Stratton and Spitzer concluded:

> Other things being equal, the greater the similarity in assessment operations the greater the correspondence in results obtained by different instruments.[3]

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[1] John R. Stratton and Stephen Spitzer, "Test Equivalence of Projective and Structured Self-Concept Instruments," Journal of Projective Techniques, XXX (1966), 456-459.

[2] D. P. Crowne and M. W. Stephens, "Self-Acceptance and Self-Evaluative Behavior: A Critique of Methodology," Psychological Bulletin, LVIII (1961), 104-121.

[3] Stratton and Spitzer, *op. cit.*, p. 458.

[4] Viney, *op. cit.*, p. 492.

Concerning construct clarification, Viney stated:

> ...lack of congruence may be overcome by specification of the aspect of self-regard to be measured.[1]

In view of these limitations, it would be quite inappropriate to discuss all of the previously cited research without first clarifying the parameters of this effort. First, segments of Brookover's writings in which he contrasts his view of self-concept to others will be quoted. Major points and some supporting research of his views will be noted. Secondly, based on this discussion, results of studies which have used similar assessments and designs will be briefly discussed.

Brookover, Erickson, and Joiner write:

> Self-concept of academic ability as used in this research should not be confused with other definitions of self-concept or self. Mead's behavioristic use of "self-reflective," "self-attitude," "self-consciousness," "self-communication," and "self-as-an object" are most pertinent to our usage. It has not been our intention to measure or infer a self as a subjective phenomenon as in Mead's use of the "self as I." Self-concept is defined as symbolic behavior in which the individual articulates a program of action for himself as an object in relation to others.
>
> Self-concept of academic ability refers to behavior in which one indicates to himself (publicly or privately) his ability to achieve in academic tasks as compared with others engaged in the same task.... (it) does not refer to some underlying mental structure such as a phenomenological self, as defined by such theorists as Jersild or Maslow. Rather it refers to symbolic behavior, and as such, to an empirical event. Thus when individuals publicly define their academic ability, we may observe what we refer to as self-concept of academic ability behavior.

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[1] Viney, op. cit., p. 492.

> Since the process of definition from our theoretical viewpoint is a language process, defining oneself is also public in that it employs a shared symbolic system....Language behaviors which refer to one's ability in academic tasks are therefore classified as self-concept of academic ability behavior. Conversely, statements which do not publicly and literally refer to one's ability to carry out academic tasks with reference to others, such as statements of one's worthiness, desire, and aspiration are excluded.
>
> We perceive of self-concept of academic ability as only one of many concepts of self. Other concepts of self refer to other areas of behavior which may vary from that involving school performance....Perhaps the observed low correlations between scores on such multi-factor self-concept scales (those based on a phenomenological approach) are a consequence of the assumption that "low" self-concepts are reflected in lower scores throughout these categories. Such an assumption is not in accord, however, with our position or observations. For example, it would not be an incongruous situation for a person to define himself as very handsome, well-behaved, popular, happy, and stupid in physics. In this kind of situation, no correlation would be expected between self-concept scores involving these dimensions and physics achievement.... On logical grounds, items which assess specific academic self-conceptions ought to be superior to general self-perception items when school achievement is to be predicted.[1]

On the basis of Brookover's discussion, two major points seem to distinguish his orientation and assessment techniques from those adhering to a phenomenological approach. One, self-concept can be measured directly by the evaluative statements an individual makes about himself to others. Two, assessment of a specific role self-conception ought to be superior in predicting role-related behaviors than general self-perception terms. The first distinction is very difficult to validate; however, the predictive power of Brookover's instrument and the overall success of his research would seem to lend credence to it.[1] The second distinction has received support by other investigators. For example, Nash[2] found that items which best differentiated between high and low achievers were those dealing with the student's perception of the quality of his school work. And Stillwell[3] noted a similar relationship when she reported that a measure of global self-concept showed no relationship to achievement but the role related student self-concept displayed a highly significant relationship to achievement. The existence of a relatively independent academic factor in at least one self-concept instrument, The Way I Feel About Myself, was reported by Piers and Harris.[4]

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[1] Brookover, _op. cit._, pp. 23-25.

Of the studies reviewed, only Drews, Perron, Ringness, and Fine and Caldwell used instruments which specifically tapped the student's self-conception in an academic role. And of these, only Drews[1] was directly concerned with the effects of placement in a special class on self-concept. Her results were similar to those of Towne and Joiner[2] in that each found positive effects of special class placement. Furthermore, if one assumes that positive experiences in the special class are antecedent conditions causing the mentally retarded's self-concept to compare favorably with regular class students' self-concepts, then, the results of Ringness[3] and Fine and Caldwell[4] also support Towne and Joiner's study. On the other hand, Perron's[5] study, which found that mentally retarded children had lower estimates of the probability of their success in completing a task, does not agree with the results mentioned above. However, the latter study is not directly related to the others in that it was not conducted in terms of special class placement.

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[1] Brookover *et al.*, *op. cit.*

[2] Ralph J. Nash, "A Study of Particular Self Perceptions as Related to Scholastic Achievement of Junior High School Age Pupils in a Middle Class Community," *Dissertation Abstracts*, XXIV, 9 (1964), 3837-3838.

[3] Lois Jean Ryan Stillwell, "An Investigation of the Interrelationships Among Global Self Concept, Role Self Concept, and Achievement," *Dissertation Abstracts*, XXV (1965), 682.

[4] Piers and Harris, *op. cit.*

Although the above results offer some confirmation for the study by Towne and Joiner, except for Ringness's, each was based on only one year's observations. Thus, they do not suggest whether or not the EMR's self-concept is expected to drop, remain the same, or rise the second year following placement. The study by Ringness included measurements over a two year period, but as he changed his procedure the second year, the meaningfulness of a longitudinal comparison is questionable.

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[1] Drews, op. cit.

[2] Towne and Joiner, op. cit.

[3] Ringness, op. cit.

[4] Fine and Caldwell, op. cit.

[5] Perron, op. cit.

In regard to alternative explanatory hypotheses, i.e., the referent group vs. perceived evaluation of teachers explanation, no evidence was found to clearly support one or the other. However, each was mentioned by a different investigator in the respective descriptions of their studies. Fine and Caldwell[1] suggested that the unrealistic self-concepts of special education students may be the result of special class teachers placing minimal emphasis on academic skills thus providing the students with a more favorable setting on which they might attach their self-evaluations. And the procedural change made in the Ringness study was instituted because students used different referent groups to make their self-evaluations.

To summarize, considering both the longitudinal nature of this project and the different operational definition of self-concept employed in this research compared to that used in most studies, little evidence clearly supports or disputes the hypotheses stated herein.

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[1] Fine and Caldwell, op. cit.

CHAPTER IV

PROCEDURES

Research Strategy

The research reported herein is the second part of a two-year longitudinal study which has operated within the framework of U.S. Office of Education Grants No. 32-32-0410-6001[1] and No. 3-7-700052-3099. The general procedure followed in the project has been to periodically observe changes which have taken place in EMR children following their placement in a special class. During the first year, the study was organized as a "time series" design[2] which requires a finite series of measurements of experimental subjects obtained at _n_ successive equally spaced points in time. A change in conditions is introduced or observed at some point within the series, and if differences among the measurements following the change in conditions are not the same as those preceding the change, then, within certain limitations, one can attribute the change in the dependent variable to the change in conditions.[1]

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[1] Towne and Joiner, _op. cit._

[2] See Donald T. Campbell, "Factors Relevant to the Validity of Experiments in Social Settings," _Psychological Bulletin_, LIV (1957), 297-312; Donald T. Campbell and Julian S. Stanley, "Experimental and Quasi-experimental Designs for Research on Teaching," _Handbook of Research on Teaching_, ed. N. L. Gage (Chicago: Rand McNally, 1963), pp. 171-246; Donald T. Campbell, "From Description to Experimentation," _Problems in Measuring Change,_ ed. Chester W. Harris (Madison, Wisconsin: University of

But it must be emphasized that while the current study uses the same design as Towne and Joiner did, i.e., four equally spaced observations, it differs in the way results may be interpreted. As no specific change of conditions during the second year of the time series was introduced, the findings reported herein are restricted to interpretations of positive or negative relationships rather than in terms of antecedents and consequences. Although this limitation is particularly crucial in studies which are definitive in intent, it is less so in an exploratory study such as this one. In essence, each research hypothesis has been stated and will be examined only in terms of relationships; are variations in special education EMR students' responses significantly related

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Wisconsin Press, 1963), pp. 212-242.; Joyce A. Sween and Donald T. Campbell, The Interrupted Time Series as Quasi-experiments: Three Tests of Significance, an unpublished manuscript (Northwestern University, 1965); Joyce Sween and Donald T. Campbell, "A Study of the Effect of Proximally Autocorrelated Error on Tests of Significance for the Interrupted Time Series Quasi-experimental Design," an unpublished manuscript (Northwestern University, 1965).

[1] Ibid., p. 2.

to the passage of time? The import of these relationships is if changes in GSCA are observed (Hypothesis I), by noting similar or disparate changes in the indices designed to explain the variation in GSCA (Hypotheses III and IV), each explanation becomes more or less tenable.

Instrumentation

All instruments other than the evaluation questionnaires and teacher questionnaires were originally developed by Brookover and his associates for use in his longitudinal study of regular class students. The instruments are: General Self-Concept of Ability Scale (GSCA), Perceived Evaluation of Teachers Scale (PET), Academic Aspirations Scale (AA), Academic Expectations Scale (AE), Academic Significant Others Test (ASO),[1] and the Class Evaluation Questionnaire.

The General Self-Concept of Ability Scale[2] consists of eight questions to which the respondent answers by marking one of five Likert type alternatives. Each question attempts to elicit some facet of the student's evaluation of his academic ability. Some questions focus on the student's evaluation of his school work and capabilities (Items 7 and 8), others on how he compares himself to other students in school ability (Items 1, 2, and 3), and still other items on how the student thinks he would do in college (Items 4, 5, and 6). The perceived evaluation of others instruments follow a similar format, but only five questions are involved.

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[1] Brookover, Patterson, and Thomas, op. cit.

[2] Appendix A.

The GSCA Scale was originally analyzed through Guttman scaling procedures. However, the scale type yielded by Guttman procedures provided a smaller range of scores than Brookover and associates desired (1 to 8 points), therefore, the conventional method of summing (a possible 40 points) was compared to the scale types. The results of this comparison showed that the 40 point summation method and the Guttman eight point method yielded almost identical correlations of the GSCA Scale with grade point average. Thus, for convenience, the summation method has been used in subsequent research.[1] In Brookover's longitudinal study of students from the seventh grade through the twelfth, the means on the GSCA Scale only varied between 28.0 and 29.7, while the standard deviations ranged from 3.7 to 4.8. The GSCA mean in the seventh grade was 28.8 and in the twelfth it was 28.5. The PEP means ranged from 19.3 to 20.3, the PET means from 18.6 to 19.4, and the PEF means from 18.5 to

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[1] Brookover, Patterson, and Thomas, op. cit.

18.9. All of the standard deviations fell within the 3.1 to 4.6 range.[1]

As these instruments were not developed for use with EMR students, before utilizing them with their sample, Towne and Joiner, analyzed the above scales through reference to the Thorndike-Lorge word list.[2] They found that in the GSCA Scale all words except ten were below the third grade level. Seven of the ten words were at the fourth grade level and the remaining three were at the sixth and seventh grade levels. In other scales, only three words above the third grade level were found. They concluded:

> Since listening comprehension vocabulary is generally accepted as being greater than reading comprehension vocabulary, the Thorndike-Lorge analysis leads one to be optimistic regarding the use of the Brookover scales with EMR students in individual testing situations.[3]

As Towne and Joiner reported no difficulties in administering the scales, it is assumed that their optimum was fulfilled.

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[1] Brookover, Erickson, and Joiner, Ibid., pp. 352-353.

[2] Edward L. Thorndike and Irving Lorge, The Teacher's Word Book of 30,000 Words (New York: Teachers College, Columbia University, 1944).

[3] Towne and Joiner, op. cit., p. 63.

The reliability of the scales has been established through the extensive research of Brookover and his associates. Internal consistency coefficients arrived at through Hoyt's Analysis of Variance have ranged from .853 to .865 for the GSCA Scale and from .912 to .927 for the PET Scale. One year test-retest coefficients of the GSCA Scale have ranged from .688 to .724 and from .441 to .601 for the PET Scale.[1] Based on data gathered from the sample of EMR children, Towne and Joiner reported a one month test-retest coefficient of .73 and an internal consistency coefficient of .74 for the GSCA Scale.[2]

Validity studies of the GSCA Scale have also been conducted. Support for the Scale's concurrent validity was found in positive correlations, ranging from .53 to .73,[3] between it and specific subject matter self-concepts. The Scale's construct validity has been evidenced by its positive correlations with both grade point average and the instruments assessing the students' perceptions of how others evaluate their ability. They ranged from .48 to .63 and .41 to .52 respectively.[4] The analysis of changes among grade point average, GSCA, and the perceived evaluation of others instruments has resulted in findings which are in accordance with the theoretical expected outcomes, thus, substantiating the predictive ability of the Scale.[1]

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[1] Brookover, Erickson, and Joiner, op. cit., pp. 60-63.

[2] Towne and Joiner, op. cit., p. 65.

[3] Brookover, Patterson, and Thomas, op. cit., p. 55.

[4] Brookover, Erickson, and Joiner, op. cit., p. 120.

The Interview

To be consistent with procedures followed during the first year,[2] each question and its alternatives were read to the subjects in individual testing sessions. Prior to the initial testing, the interview schedule and general procedure were carefully reviewed by the interviewers with special emphasis on potential trouble spots. This information was provided by an interviewer from the preceding year. Instructions to the examiners were brief. They were told to introduce themselves as being from Michigan State University and engaged in a survey of students from all over Michigan. In case students asked why it was necessary for them to continually respond to the same set of questions, the interviewers were instructed to tell the students that part of the survey was to find out how students felt about these things at different times. The interviewers were also told to make it clear that all answers would be confidential.

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[1] Ibid., p. 123.

[2] Towne and Joiner, op. cit., pp. 65-66.

During the interview itself, the interviewer would sit beside the subject and point to the questions and the alternatives as he read them to the student. If at any time a subject had a question, the examiners were allowed to re-read the questions or to define and give examples which would increase the subject's grasp of the question's content. For students who were being interviewed for the first time, a set of warm-up questions was administered before the regular questionnaire. These questions were similar in format to the ones on the regular schedule and were designed to give the examiner an opportunity to explain possible trouble words prior to reading the regular questionnaire. After the interview was completed, the students were thanked and told that their help was needed and appreciated. The duration of each interview ranged from 20 to 30 minutes.

Samples

Original Sample

The population in the first year's report was defined as seven to fifteen year old children declared eligible by cooperating school systems for initial EMR special class placement in September of 1965.[1] Because of practical considerations, neither school districts nor students actually placed were selected at random. The cooperating school districts were the six out of over twenty recommended by the Michigan Department of Instruction that indicated a willingness to participate in the study. The sample consisted of 62 students from these districts who were actually placed in special classes. Although the selection process undoubtedly varied from system to system, a common element in the various processes is that all systems adhered to the standards set by the Michigan Department of Public Instruction.[2] The composition of the original sample in terms of age, sex and representative proportions from the school districts is summarized in Table 4.1. The chart shows that there were approximately twice as many males as females; the mean age of the entire group was 11.63 and each of two school districts supplied approximately one third of the subjects; District B is an urban district and District E is rural. Districts A, C, and D are suburban while F is a small city and G is a small town.

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[1] Towne and Joiner, op. cit., p. 67.

[2] See Appendix B.

TABLE 4.1.--Sample by district, age and sex.

		District							Sex Total		Age Total
		A	B	C	D	E	F*	G*	M	F	
7	M						2		2		2
	F									0	
8	M						2		2		3
	F						1(1)			1	
9	M	1	1	2					4		4
	F									0	
10	M		5(1)**			1(1)			6		11
	F		3(1)			1	1			5	
11	M		1	2		1		1(1)	5		5
	F									0	
12	M		4(1)		2	2(1)			8		10
	F	1	1							2	
13	M		5(2)	1		4			10		20
	F		2		2	4(1)		2		10	
14	M		1			1			2		3
	F					1				1	
15	M					3(1)			3		4
	F					1				1	
Sex Totals	M	1	17	5	2	12	4	1	42		
	F	1	6	0	2	7	2	2		20	
District Totals		2	23	5	4	19	6	3			62

*F and G are actually parts of the same county district; F is a small city and G is a small town.

**Numbers not in parentheses show the distribution of subjects during the first year of the study, while the numbers in parentheses show the distribution of subjects dropped during the current study.

Longitudinal Sample

Of the original 62 students used in the analysis for the first year, 51 were followed during the second year. Of the 11 who were dropped from the study, 3 were placed in an institution, 7 moved out of the school district, and 1 was dropped because of parental objection. The numbers in parentheses in Table 4.1 show the distribution of students dropped from the current study. Inspection of the table shows that no systematic change in the composition of the sample took place from the first year to the second.

Although most of the students were retained during the second year of the study, only data from 37 could be used in many analyses. Two factors account for this. One, seven of the students were reassigned to regular classes. And two, seven students were only interviewed the last time during the second year. The purpose of interviewing the latter subject only the final time was to gain some estimate of the repeated testing effect over the second year without losing information on the majority of the sample. These losses, however, did not create a severe problem. Data gathered from the special education students who were reassigned to regular classrooms provided an interesting contrast to both those remaining in the special class for a second year and those who had moved from a regular class to a special class. And, if no differential change occurred between these subjects interviewed every time and those interviewed only the last time, then the two groups could be combined for those analyses which required only the final observation.

Pre-Placement and Post-Placement Longitudinal Samples

The pre-placement longitudinal sample consisted of those students on whom data had been obtained both prior to placement and following placement. In the Towne and Joiner study, complete data for both pre and post placement observations were available for only 22 of the 62 subjects. These 22 were defined as their longitudinal sample.[1] Due to the losses described above, only 17 of the 22 remained in the current study. Inspection of the changes in GSCA of these 17 revealed that no systematic loss had occurred. These 17, then, were designated as the pre-placement longitudinal sample and were used in the analyses which required pre-placement observations. The remaining students of the longitudinal sample (N=20), those for whom data was available only after placement, were designated as the post-placement longitudinal sample.

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[1] Towne and Joiner, _op. cit._, p. 72.

New Sample

This sample consisted of 14 students from Districts B and D who were placed in EMR classes in September of 1966. The procedure in selecting these students was the same as that used in obtaining the original sample. Their ages ranged from 9.4 to 15.2 with a mean of 12.1. This distribution was comparable to that of students in the original sample. The primary use of scores obtained from these students was to examine short range and medium range repeated testing effects. However, if no effects were observed, the scores could be used as a small replication of the Towne and Joiner study.

Methods and Analyses

Hypotheses

To examine the hypothesized descending linear trend in GSCA, a parametric trend analysis involving repeated measurements on the same subjects was utilized.[1] As it was necessary to estimate values for missing observations of the sample from which Towne and Joiner drew their conclusions, the pre-placement longitudinal sample, there appeared to be no advantage in only using this group in the analysis[1] so the entire longitudinal group was utilized. The total longitudinal group was also used when the repeated measurement analysis of variance was employed to test the hypothesis concerning change in the perceived evaluation of parents.

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[1] B. J. Winer, Statistical Principals in Experimental Design (New York: McGraw-Hill Book Company, 1962), pp. 132-135.

Because values of missing observations could not be estimated for testing the hypotheses concerning EMR students' perception of derogatory remarks and affective orientation toward the special class, the size of the sample for this analysis depended upon the number of subjects who were not absent on the scheduled interview days in both June 1966 and June 1967. This reduced the number to 34. McNemar's Test[2] for a significant change and the binomial test[1] were employed in the analysis.

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[1] Towne and Joiner resolved the problem of missing observations by basing their analyses only on subjects for whom complete data had been collected. This method, while satisfactory in their study, could not be utilized in the current one as the number of students having at least one missing observation steadily increased as the study progressed. In addition, their hypotheses necessitated pre-placement observations while the current one did not. The values of the missing observations were estimated by multiple regression equations based on the complete data gathered from 32 subjects. The three scores obtained from the individual were then used to estimate his missing observations. (See Appendix D.) In the few instances in which regression techniques could not be employed, the values were interpolated from the two observation points immediately preceding and following the missing observation. In the statistical analysis, the degrees of freedom in the error term were reduced in accordance with other methods of substitution.

[2] Sidney Siegel, Nonparametric Statistics for the Behavioral Sciences (New York: McGraw-Hill, 1956), pp. 63-67.

Methodological Questions

To investigate whether the repeated administration of the self-concept instrument had major effects on responses of the subjects, two procedures were followed. One, the 14 newly placed students were randomly divided into two groups. One group was interviewed at all four times and the second group was interviewed at only the second and fourth times.[2] A t-test was computed for the difference in the means of the groups at time two to determine if there was a short range repeated testing effect and between the means at time four to determine if there was a medium range repeated testing effect. Two, the number of increases in GSCA of the group who had been interviewed each time during the first year but only the last time during the second year was compared to the number of increases of the sample which had been interviewed at every time over both years. The Z test[3] of a difference in proportions was employed to test the statistical difference of the changes.

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[1] *Ibid*., pp. 36-42.

[2] Time two refers to December 1966 and time four to June 1967.

[3] Allen Edwards, *Experimental Design in Psychological Research* (New York: Holt, Rinehart, and Winston, 1963), pp. 53-54.

To explore if different interviewers had an effect on the subjects' responses to the GSCA Scale, the three interviewers were randomly assigned to three groups of subjects during one of the first three testing times. Within practical limitations, the students were randomly assigned in forming the three groups. As the number of students in the longitudinal sample could not be divided equally into three groups, several from the new sample were added to maintain equality among the groups. A problem which occurred was that one interviewer was able to meet with only about one-half of his subjects at the last testing time. So that the scores of the remaining half of his subjects would not be confounded by the effects of the other interviewers, a new interviewer was selected to test these students. If there was no interviewer effect, then this procedure would not seem to invalidate the results. Analysis of variance in a repeated measurement Latin Square design[1] was employed to determine the extent of the interviewer effect.

Effects of Placement

The analysis of the question concerning change in newly placed students' GSCA was limited as there were only two scores for seven of the students and four scores for the remaining seven. However, if there was not a repeated testing effect, then the means based on the number interviewed at each time should reflect the type of change in GSCA which occurred. These means, then, were merely plotted. In the analysis of the effects of being reassigned to a regular class the L test[1] was utilized. This statistic is specifically designed as a rank order test of a linear trend which, essentially, determines how well a set of observed data fits a theoretical or empirical ordering. In this instance, the data was compared to a descending linear trend, as if the initial effects of special class placement on the academic self-concept of the EMR were positive, then the initial effects of reassignment should be negative.

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[1] Winer, _op. cit_.

Teacher Value Orientation and Changes in GSCA

The original plan for ascertaining teacher orientations called for individual interviews with all of the teachers of the students in the study. The interview schedule asked the teachers to respond to both open-ended and objective questions. The interviews themselves were scheduled late in the year so that they might not confound the results of the major part of the study. However, because of numerous conflicts, only nine of the twenty could be conducted. So that this part of the study would not be completely dropped, the interview schedule was rewritten as a questionnaire and given to the remaining teachers. It asked for general information about the teacher's background, school policies concerning placement of EMR children, common problems faced by EMR children prior to and after placement, and both open-ended and objective questions concerning the teacher's objectives in teaching EMR students. Because problems occurred in interpreting open-ended questions, it was decided to use only the objective questions in the analysis.

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[1] Ellis Page, "Ordered Hypotheses for Multiple Treatments: A Significance Test for Linear Ranks," Journal of the American Statistical Association, LVIII (March 1963), 216-230.

The objective questions asked the teachers to rank ten educational objectives from one to ten on the basis of the importance to them in their teaching.[1] Following the procedure outlined by Ohnmacht,[2] an obverse factor analysis was performed on the teachers' responses. After the factors (groups of teachers) had been extracted, they were analytically rotated using the Normal Varimax Solution. As the purpose of this analysis was only to identify two groups of teachers, academically vs. socially oriented, only the first two factors were used. The group of teachers was then dichotomized on the basis of which factor the teachers had their highest loading. To determine if this method had been effective in differentiating the two types of orientations, a factor analysis of the objectives was performed. Tests of the difference between the two groups' rankings of the items which appeared to be most socially oriented and those which appeared to be most academically oriented were then computed. As a check on the concurrent validity of the classification, a median test[1] compared the two groups' responses to a question asking what proportion of class time the teacher gave to teaching academic subject matter.

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[1] See Appendix A.

[2] Fred W. Ohnmacht, "Factor Analysis of Ranked Educational Objectives: An Approach to Value Orientation," Educational and Psychological Measurement, XXV (1965), 437-447.

Because the rate of questionnaire return for last year's teachers was extremely low, it was not possible to observe changes in GSCA whenever students moved from a teacher with one type of orientation to a teacher with a different orientation. Another problem was that being promoted may have had an effect on the students' GSCA. To compensate for these difficulties, in addition to whether their teacher was classified as academic or social-adjustment oriented, students were categorized by whether they had been promoted or not. And analysis of covariance was used with the final GSCA score during the first year as the covariate. All 45 students could have been used in this analysis as only the final GSCA scores of the two years were needed, but it was decided to use only students who were present at the two times and not those for whom regression estimates were needed: a total of 38 students.

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[1] Siegel, op. cit., pp. 111-116.

Referent Group Questions

The first step in investigating whether the observed changes in GSCA could be accounted for by changes in a particular set of items was to factor analyze the Scale. This was done with the responses gathered during the last observation period as the greatest number of students were interviewed at that time. Then the set of items was dichotomized on the basis of which of the two significant factors an item had its highest loading. Scores for the pre-placement longitudinal sample at each interview period were derived for the two sets of items, and the changes which occurred in the two sets of items were compared. The repeated measurement analysis of variance was used to make these comparisons.

The questions concerning the differences in the students' answers to the Scale when asked to respond in terms of different referent groups, the change in academic aspirations, the change in academic expectations, and the change in the perceived evaluation of parents and friends, were also analyzed by the repeated measurement analysis of variance model.

CHAPTER V

RESULTS

Conditions

Prior to presenting the results in the main body of this section, data concerning two assumptions of the subsequent analyses will be examined. One, the hypothesis and question concerning the teacher's role in changes of the EMR's GSCA were based on the first year's finding that teachers were named as academic significant others by an increasing proportion of the students during their first year of special class placement. Before teachers can be considered as an explanation for the changes in GSCA over the last year and one-half period, March 1966 to June 1967, it must first be shown that they retained their standing as academic significant others. Table 5.1 shows that seven students who named teachers as academic significant others in June 1966 did not name them in June 1967 and three students who did not name them in June 1966 named them in June 1967. The McNemar Test[1] for changes was not significant; thus, the assumption that teachers retained their status as academic significant others for the EMR students during their second year in the special class seemed tenable.

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[1] Sidney Siegel, op. cit., pp. 63-67.

TABLE 5.1.--Analysis of the change in the number of students naming teachers as academic significant others from June 1966 to June 1967.

		June 1967		
		No. of Students not naming teacher as ASO	No. of students naming teacher as ASO	n
June 1966	No. of students naming teacher as ASO	7	16	25
	No. of students not naming teacher as ASO	9	3	12
				37

$x^2 = .9 \qquad p > .05$

The second assumption was that the pre-test longitudinal group (N = 17), those for whom information was available prior to placement, and the post-test longitudinal group (N = 20), those for whom information was available only after placement, were samples from the same population. This assumption is important since certain analyses could be conducted only with the pre-test longitudinal group so that if no difference was found between the two groups, a substantial argument could be made that analyses based on data from the pre-test longitudinal sample (N = 17) were meaningful in terms of all 37 students.

To ascertain the validity of this assumption, two tests were made. One compared the GSCA trends of the two groups during the first year, and the other examined them over the second year. There were two reasons for conducting separate analyses. First, to argue for comparability of groups, it had to be shown that the change in GSCA reported by Towne and Joiner for the longitudinal group was similar to that which occurred in the remainder of the sample. And, secondly, since some intervening condition may have differentially affected the groups during the second year, it was necessary to demonstrate that the GSCA changes in the two groups were also similar during that year.

The tests were based on Winer's recommended procedure for comparing two groups of unequal size when observations have been obtained at several different times.[1] If the variance ratio test of the group-time interaction is not significant, then, admitting the usual limitations in interpreting statistical tests, one can conclude that the difference between the changes which had occurred within each group was the result of random fluctuation.

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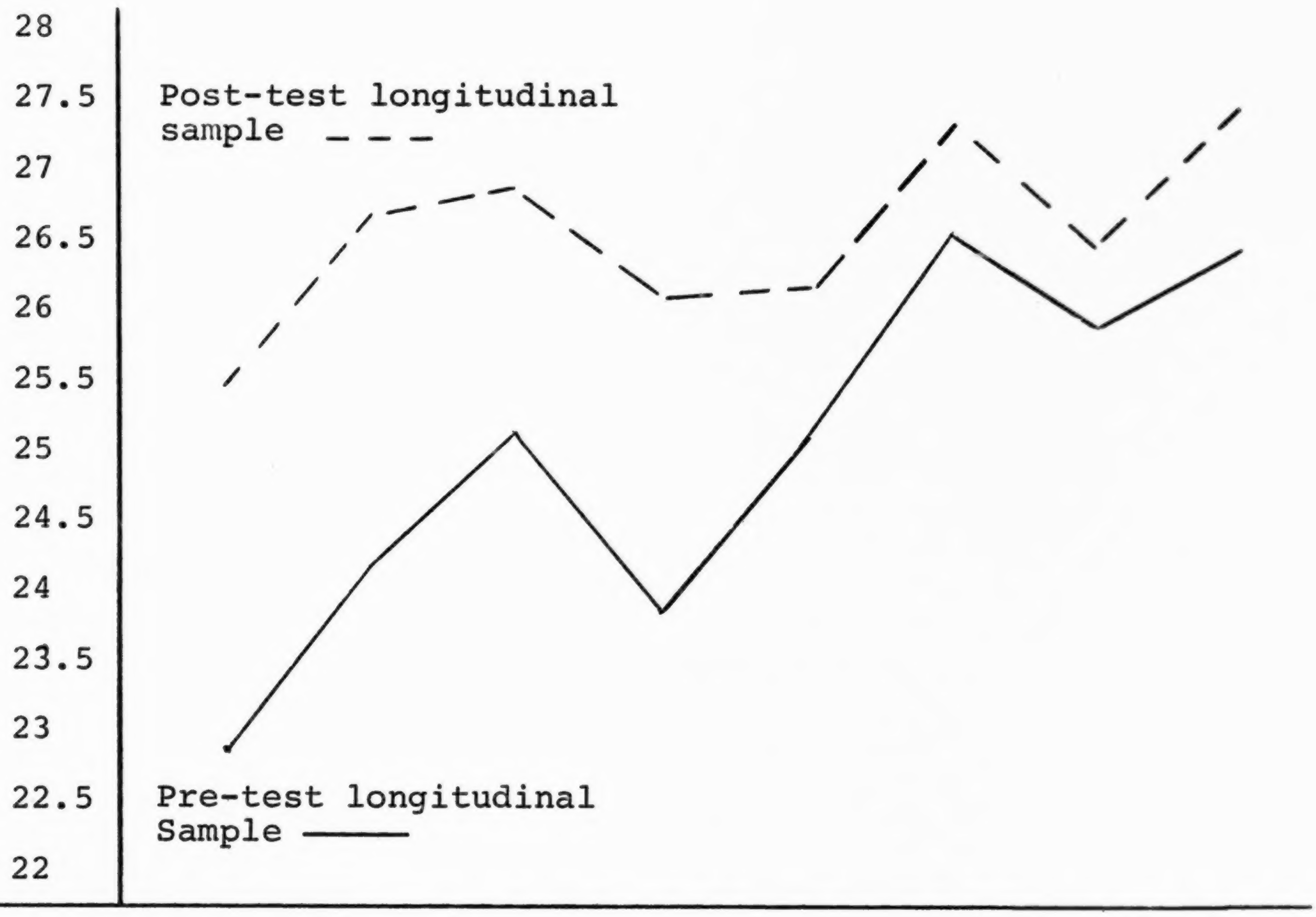
[1] Winer, op. cit., pp. 374-378.

The results of the analyses for the first and second years are summarized respectively in Tables 5.2 and 5.3. Since both values of F for the time-group interactions are considerably lower than the tabled values for the rejection of the hypothesis of no difference, for purposes of this report, it is concluded that the changes in GSCA were similar in both groups. The means of the two groups at the eight time periods are shown in Figure 5.1.

Methodological Questions

Question I. Did repeated interviewing affect the responses to the GSCA Scale during the first year of the study? To examine this question two separate tests were conducted. One compared the December GSCA mean of the newly placed EMR students interviewed both in September of 1966 and December of 1966 to that of the newly placed students interviewed only in December. The other compared the June 1967 GSCA mean of the group interviewed every time during the year to that of the group interviewed only in December 1966 and June 1967. Table 5.4 shows the means of the groups at the various time periods and the results of the t tests between the groups' means in December and June. As neither of the tests reached the .05 level, it was concluded that the repeated testing had a negligible effect on the subsequent responses of the EMR students over the first year of testing.

Figure 5.1.--Post-test and pre-test longitudinal sample means from September 1965 to June 1967



Time	3	4	5	6	7	8	9	10
Post-test Longitudinal Sample Means N = 20	25.50	26.00	26.90	26.10	27.40	26.85	26.45	27.60
Pre-test Longitudinal Sample Means N = 17	22.82	24.35	25.18	23.82	25.12	26.53	25.88	26.38

TABLE 5.2.--Analysis of variance summary table for the comparison of changes in General Self Concept of Ability scores of students having pre-placement scores and those not having pre-placement scores during the first year following placement in the special class.

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance
Between Subjects					
Groups	192.77	1	192.77		
Subjects w groups	2393.67	35	94.11		
Within Groups					
Time	73.45	3	24.49		
Time x group	4.62	3	1.54	.23	<.05
Time x subject w group	665.43	101	6.59		

TABLE 5.3.--Analysis of variance summary table for the comparison of changes in General Self Concept of Ability scores of students having pre-placement scores and those not having pre-placement scores during the second year following placement in the special class.

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance
Between Subjects					
Groups	28.12	1	28.12		
Subjects w groups	3686.73	35	105.34		
Within Groups					
Time	45.70	3	15.25		
Time x group	7.96	3	2.65	.36	<.05
Time x subject w group	673.05	91	7.40		

TABLE 5.4.--Summary of analyses of the repeated testing effect on General Self Concept of Ability scores during the first year in the special class.

Time	Group 1 (N=7) Mean	Group 1 (N=7) Variance	Group 2 (N=7) Mean	Group 2 (N=7) Variance	Difference	t Value	Significance
Sept 1966	24.85						
Dec 1966	26.70	50.15	27.43	17.20	.73	.24	<.05
March 1967	26.14						
June 1967	27.28	33.63	28.85	33.84	1.57	.51	<.05

The significance of this finding is twofold. On one hand, it lends credence to the procedure used by Towne and Joiner in which they had interviewed a sample of EMR children four times over a nine month period. And secondly, as there was no repeated testing effect, the increase in the newly placed students' GSCA means supports their finding of a positive effect of special class placement on EMR students' GSCA.

Question II. Did repeated interviewing affect the responses to the GSCA Scale during the second year of study? Because, in this instance, the experimental group was not randomly selected, it was necessary to employ a method of analysis which would take into consideration the initial status of the two groups. The method selected compared the number of decreases in GSCA of those students interviewed only the last time during the second year to the number of decreases in GSCA of those students interviewed all four times. Statistical significance was tested by the Z test[1] of a difference in proportions. As Table 5.5 shows, the Z value did not exceed the critical value so it was concluded that the repeated interviews did not have an appreciable effect on the subsequent responses of the EMR children during the second year of the study.

TABLE 5.5.--Analysis of the repeated testing effect on General Self Concept of Ability scores during the second year in the special class.

	No. whose GSCA remained the same or increased	No. whose GSCA decreased	n
Students interviewed only the last time	4	3	7
Students interviewed all four times	21	12	33
			40

$z = .346 < .05$

Question III. Did the different interviewers elicit different responses to the GSCA scale? As noted in the procedural section, the experimental design utilized to ascertain the interviewer effect was a three by three Latin Square. To utilize this particular design, it is necessary to randomly assign subjects to three groups and then employ the three levels of the two treatments in a manner so that each of the three groups randomly receives three of the possible nine level by level treatment combinations. The design employed is diagramed below.

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[1] Allen Edwards, op. cit., pp. 53-54.

	Time I	Time II	Time III
Group A	3*	2	1
Group B	1	3	2
Group C	2	1	3

*Interviewer

The randomization procedures are particularly important in the interpretation of the results from the Latin Square design. As the main effects are, in most instances,[1] inseparable from the interaction of the other two "treatments," these interactions must be considered negligible in the interpretation of main effects. That is, if a significant main effect is found, it must be assumed that it is not the result of a significant interaction. Although this is a strong assumption, in most instances if proper randomization procedures have been followed, the assumption is valid.

In this study, the treatment of interest is the interviewer so the interaction which has to be assumed negligible is the Time by Group. As there were certain practical limitations on the assignment of subjects to the groups, the randomization procedure was slightly restricted; therefore, assuming the non-existence of this interaction may be questionable. However, Table 5.6 shows, there was no interviewer main effect, therefore, if there was a Time by Group Interaction, it was not large enough to cause the sum of the two effects to reach statistical significance. It was concluded, then, that the responses of the EMR students to the GSCA Scale were not affected significantly by the different interviewers utilized in the study.

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[1] Winer, op. cit., pp. 538-543.

TABLE 5.6.--Analysis of variance summary table of the effect of the three interviewers on the EMRs' responses to the General Self Concept of Ability Scale (N = 39).

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance
Between Subjects					
Groups	98.82	2	49.41		
Subjects w groups	2936.84	36	81.58		
Within Groups					
Time	84.15	2	42.07		
Interviewer	34.38	2	17.19	1.49	<.05
Residual	694.86	60	11.58		

Hypotheses

Hypothesis I. Change in the Academic Self-Concept of special class EMR students will be characterized by a descending linear trend from March 1966 to June 1967. In analyzing change in a single factor repeated measurement experiment, it is possible to weight the means in such a manner that the statistical significance of the various components of a trend (linear, quadratic, cubic, etc.) may be tested. To test the above hypothesis, the six GSCA means from March 1966 to June 1967 were weighted so that the sum of squares attributable to the linear component of the trend could be ascertained. This procedure involves squaring of the sum of the weighted totals and dividing it by the product of the sum of the squared coefficients and the number of subjects in a group.[1] The weights which were utilized, the means, the sums, and the squares, are presented in Table 5.7.

To test the significance of the linear component, the mean square of the residual term is used.[2] As Table 5.8 shows, the variance ratio test of the linear component exceeds the critical value; thus, the hypothesis of a linear trend was supported. However, it can be seen from the means shown in Table 5.7 the linear trend was in the opposite direction of that which was predicted. That is, the GSCA means rose from March 1966 to June 1967 rather than dropping.

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[1] Winer, Ibid., p. 69.

[2] As an a priori hypothesis had been stated, no over-all F statistic was necessary.

TABLE 5.7.--Summary of the preliminary analysis in ascertaining the linear component of the General Self Concept of Ability trend from March 1966 to June 1967.

Times	March 1966	June 1966	Sept 1966	Dec 1966	March 1967	June 1967
Means	26.11	25.11	25.70	27.03	26.20	27.03
Totals	966	929	951	999.7	969.4	1000.11
Weights	5	3	1	-1	-3	-5

$n = 37$ $\quad$ $\text{sum } (C \text{ sum } x_i) = -340.45$

$\text{sum } C^2 = 70$ $\quad$ $\text{sum } (C \text{ sum } x_i)^2 = 115{,}906.20$

$SS_{lin} = 115{,}906.20/37 \cdot 70$

$MS_{lin} = 44.75$

TABLE 5.8.--Analysis of variance summary table of the linear component of the GSCA trend from March 1966 to June 1967 (n = 37).

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance
Between Subjects	4715.83	36			
Within Subjects					
Time					
Linear	44.75	1	44.75	4.81	>.05
Remainder	59.20	4	14.80		
Residual	1543.64	217	9.30		

Hypothesis II. Special class EMR students will make more derogatory comments about their class in June 1967 than in June 1966. The EMR students' perceptions of their special class were determined by their responses to the questions: "What class are you in?," "What do you call your class?," "What do other kids in your room call this class?," and "What do kids from other rooms call your class?." In determining the statistical significance of the changes in response to these questions,[1] each question was considered separately. The original plan called for McNemar's test of a significant change.[2] This test requires a minimum expectancy of five in the cells indicating change.[3] Since only the last question met this requirement, an alternate procedure, the binomial test,[4] had to be used for the first three questions.

Tables 5.9 through 5.12 show the distribution of responses to each of the questions. The analyses revealed that none of the changes in response to these questions were statistically significant. However, inspection of the tables shows that in each instance where there was a

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[1] See page 28 for the criteria used to asses the nature of their perceptions.

[2] Siegel, op. cit., pp. 63-67.

[3] Ibid.

[4] Ibid., pp. 36-42.

TABLE 5.9.--Analysis of the change in responses from June 1966 to June 1967 to the question: What class are you in?

		June 1967 No. of students not making a derogatory remark	No. of students making a derogatory remark	n
June 1966	No. of students making a derogatory remark	0	0	0
	No. of students not making a derogatory remark	34	0	34
		No Change		34

TABLE 5.10.--Analysis of the change in responses from June 1966 to June 1967 to the question: What do you call your class?

		June 1967 No. of students not making a derogatory remark	No. of students making a derogatory remark	n
June 1966	No. of students making a derogatory remark	1	0	1
	No. of students not making a derogatory remark	29	4	33
	Tabled significance of the Binomial Test = .188			34

TABLE 5.11.--Analysis of the change in responses from June 1966 to June 1967 to the question: What do other kids in your room call your class?

		June 1967		
		No. of students not making a derogatory remark	No. of students making a derogatory remark	n
June 1966	No. of students making a derogatory remark	3	1	4
	No. of students not making a derogatory remark	25	5	30
	Tabled significance of the binomial test = .363			34

TABLE 5.12.--Analysis of the change in responses from June 1966 to June 1967 to the question: What do kids from other rooms call your class?

		June 1967		
		No. of students not making a derogatory remark	No. of students making a derogatory remark	n
June 1966	No. of students making a derogatory remark	4	4	8
	No. of students not making a derogatory remark	15	11	26
	$x^2 = 2.4 > .05$ level			34

change, it was in the hypothesized direction. Because of this discrepancy, the consistency in direction of the change in responses, yet none being statistically significant, no definite conclusion was reached concerning the presence of a time lag from the first year to the second in the EMRs' realization that according to others' definitions, they are failures as students.

Hypothesis III. Teachers' evaluations of special class EMR students' academic ability will be perceived more positively by those students in March 1966 than in June 1967. The procedure used in analyzing the data relevant to this hypothesis is similar to that used in testing the linear component of the GSCA trend. As this hypothesis was concerned with the means of March 1966 and June 1967, only these two received weights in the analysis. This procedure was selected over the correlated t test because it provides a single error term which may be utilized in testing the significance of additional contrasts such as a trend analysis or differences among other pairs of means. Table 5.13 shows the weights, means, sums, and squares used in the analysis.

The results shown in Table 5.14 indicate that the F did not exceed the critical value so the research hypothesis was not accepted. Regarding any additional comparisons, Table 5.14 reveals that a significant F for the overall comparisons among the means was not obtained so post hoc comparisons were not legitimate and were not

TABLE 5.13.--Summary of the preliminary analysis in ascertaining the difference between the Perceived Evaluation of Teacher means in March 1966 and June 1967 and the Perceived Evaluation of Teacher means from March 1966 through June 1967.

Times	March 1966	June 1966	Sept 1966	Dec 1966	March 1967	June 1967
Means	16.11	16.05	16.62	17.14	16.85	16.83
Totals	596					622.71
Weights	1					-1

$n = 37$ sum $(C \text{ sum } x_i) = 26.71$ $SS_{comp} = 713.42/37.2$

sum $c^2 = 2$ sum $(C \text{ sum } x_i)^2 = 713.42$ $MS_{comp} = 9.64$

TABLE 5.14.--Analysis of variance summary table of the difference in the PET means between March 1966 and June 1967 (n = 37).

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance
Between Subjects	1984.32	36			
Within Subjects[1]					
Time	34.84	5	6.97	.65	<.05
March 1966 vs June 1967	9.64	1	9.64	.90	<.05
Residual	1783.15	166	10.74		

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[1] The sums of squares and degrees of freedom are not additive for the within subjects component of this table, as the March 1966 vs. June 1967 comparison was made on a prior basis and time analysis, which included the preceding comparison, was conducted to determine if post hoc comparisons were legitimate.

conducted.[1] The conclusion reached from these analyses was that the changes in the perceived evaluation of teachers were largely the result of random fluctuations and as such, could not be considered a sufficient antecedent of the observed changes in GSCA.

Hypothesis IV. Special class EMR students will make more unfavorable comments about the special class in June 1967 than in June 1966. The two questions employed in this analysis were intended both as indices of the EMR students' affective orientation toward the special class and as indices of referent perspective. They were: "How do you like this class?" and "Would you rather be in this class or a regular class?". As in the previous analysis each question was considered separately. Since the responses were distributed in such a manner that the expected frequency cells indicating a change met the minimum requirement of five, the McNemar Test was employed.

The statistical tests of the changes presented in Tables 5.15 and 5.16 both proved to be significant. Inspection of these tables reveals that these changes occurred in the hypothesized direction. Table 5.15 shows that nine students who liked the special class in June 1966 did not like it in June 1967, while only one changed

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[1] Jerome C. R. Li, Introduction to Statistical Inference (Ann Arbor, Michigan: Edwards Brothers, Inc., 1957), pp. 238-239.

TABLE 5.15.--Analysis of the change in responses from June 1966 to June 1967 to the question: How do you like this class?

		June 1967		
		No. stating they liked the class	No. stating they disliked the class	n
June 1966	No. stating they disliked the class	1	1	2
	No. stating they liked the class	23	9	32
	$x^2 = 4.9$ <.05 level			34

TABLE 5.16.--Analysis of the change in responses from June 1966 to June 1967 to the question: Would you rather be in this class or a regular class?

		June 1967		
		No. indicating special class	No. indicating regular class	n
June 1966	No. indicating special class	3	6	9
	No. indicating regular class	8	17	25
	$x^2 = 8.45$ <.05 level			34

from disliking the special class in June 1966 to liking it in June 1967. Table 5.16 reveals that 17 of the students who indicated in June 1966 that they would rather be in the special class changed to preferring the regular class in June 1967. And over the same time period only three students changed from preferring the regular class to indicating they would rather be in the special class.

Although these results support the stated research hypothesis, in view of the previous finding that GSCA increased rather than decreased, they are actually in the opposite direction of what might be expected. In formulating this hypothesis, it had been reasoned that if the GSCA score decreased, one explanation might be that the EMR students had shifted in their referent perspective from that of the special class students to that of the non-special class students. And by assuming this different perspective, they would tend to devaluate the special class and their own self-definitions as students. In terms of their responses to the above questions, this would mean an increase in the number of students who stated they did not like the special class and would rather be in a regular class. However, as previously reported, the EMRs' GSCA did not decline, but rose. In view of this change in direction, if a positive relationship exists between GSCA and the referent perspective indices, it should have been reflected in a decrease in the number of students who stated they did not like the special class and would rather be in a regular class. As indicated in Table 5.15 and Table 5.16, this was not the case. Although GSCA had increased, the affective orientation toward the special class had become more negative.

Questions Related to Research Hypotheses

Question IV. What happens to the GSCA of special class students who have been reassigned to regular classes? Since a rise in the EMRs' GSCA following placement in a special class was observed both in the Towne and Joiner study and in the current study, the above question was investigated more as a hypothesis rather than a question. It was reasoned that if the changes in conditions accompanying placement in a special class enhance the EMR's GSCA, then the absence of these conditions, i.e., reassignment to the regular class, should be accompanied by a decrease in GSCA scores. As both studies found that the change in GSCA was characterized by an ascending linear trend, the hypothesis tested was that the change in GSCA of special class students reassigned to regular classes would exhibit a descending linear trend. The significance test employed to investigate this hypothesis was the L Test.[1]

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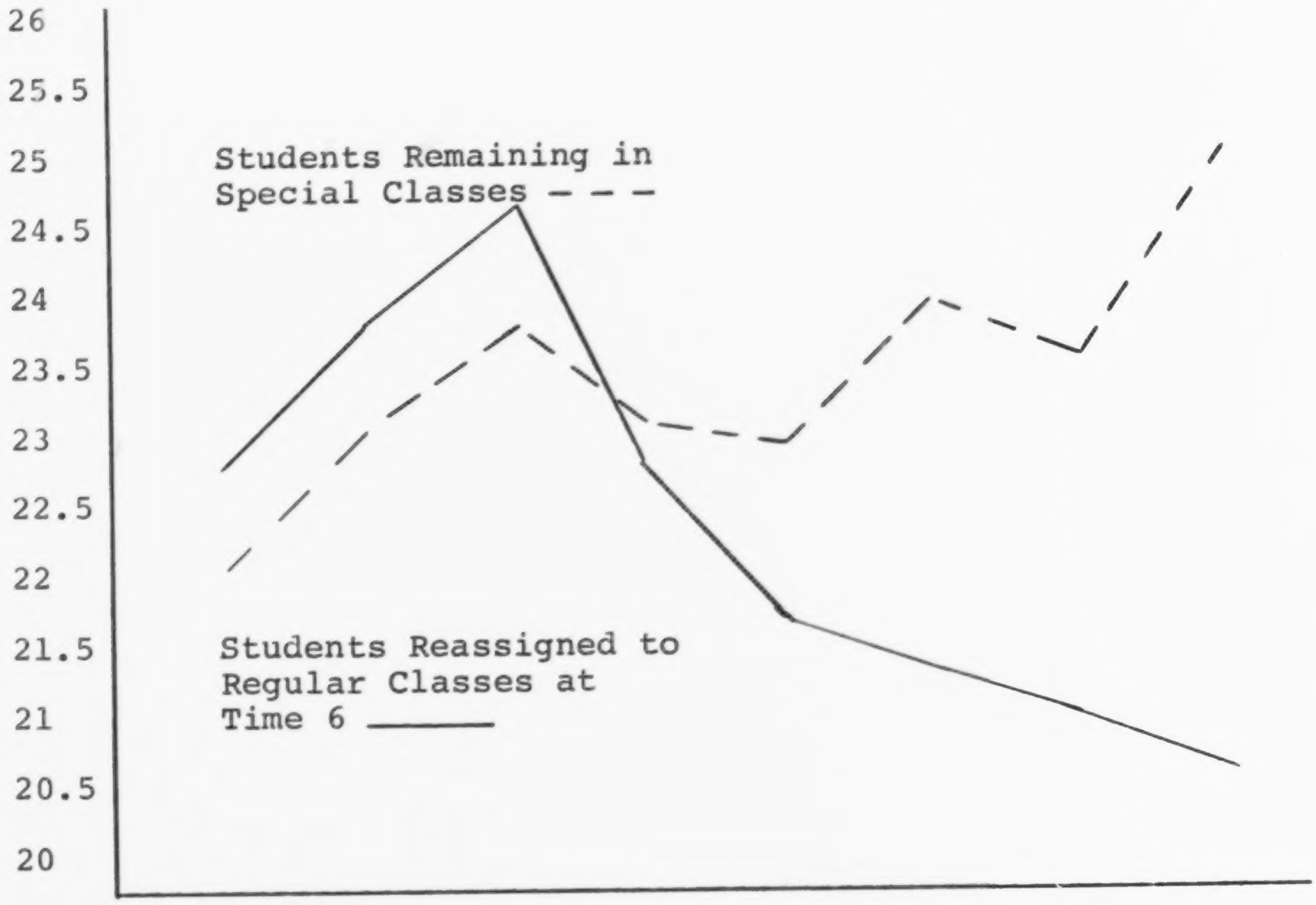
[1] Page, *Op. cit*.

As Table 5.17 shows, the L exceeded the critical value; thus, it may be concluded that the GSCA of the special education students reassigned to regular classes was characterized by a descending linear trend. It is of interest to note that this is exactly the opposite of what had occurred in both the newly placed students and the students remaining in the special class for a second year. There are, however, several limitations to these observations which must be explored. One, the students who were reassigned to the regular classes may have been "different" than those who remained in the special class. Although no statistical test was used, inspection of Figure 5.2 shows that the first year's GSCA trend for the group reassigned to the regular class corresponds quite closely to a group in the same county system who remained in the special class. Furthermore, the point where the trends begin to diverge is during the second year when the one group had been reassigned to the regular class.

Two other factors which might be considered limitations are that in four instances there were missing observations, and in two instances there were ties. Even though the missing observations could be estimated with regression techniques, a deficiency remains since in using the L Test one cannot reduce the degrees of freedom for the error term as is typically done with other types of

Figure 5.2.--General Self Concept of Ability trends from September 1965 to June 1967 of EMR students remaining in a special class and EMR students reassigned to regular classes



Time	3	4	5	6	7	8	9	10
Means of Students Remaining in the Special Class n = 8	27.13	23.15	23.88	23.25	23.00	24.00	23.63	25.13
Means of Students Reassigned to Regular Class n = 7	22.86	23.71	24.57	22.86	21.71	21.43	21.14	20.57

TABLE 5.17.--Within individual rankings of General Self Concept of Ability scores from June 1966 to June 1967 for students reassigned to regular classes (n = 7).

	Hypothesized Ranking				
Students	June 1966 1	Sept 1966 2	Dec 1966 3	March 1967 4	June 1967 5
1	2	4	1	3	5
2	2	1	3	4	5
3	2	4	1	3	5
4	2	4	1	5	3
5	1	3	4	5	2
6	1	5	2	3	4
7	1	2	3	4	5

L = 355
Tabled significance level = .001

analyses. The second problem, however, was resolved by flipping a coin and allowing chance factors to operate in assigning ranks to the tied scores.

Although both of the above limitations may reduce confidence in the linear test, the fact remains that the GSCA scores for every student placed in a regular class dropped from June 1966 to June 1967. And there were no tied or estimated scores involved in these changes. This finding has two implications for the current study. It supports the finding that special class placement has a positive effect on the GSCA of the EMR students and that this positive effect is not attributable to the repeated testing.

Question V. Is there a particular set of items which account for the observed change in GSCA? This question was explored to provide supplementary information regarding the referent group explanation of observed change in GSCA. It was reasoned that if a set of items could be clearly identified as subject to differential response according to whom the respondent compared himself in answering the questions, the referent group explanation would then be tenable if these items accounted for the change in GSCA. To identify the sets of items, factor analysis was employed. The factors were extracted by the principal axis method and rotated according to the Varimax Criterion. Factors with eigen values greater than one[1] were retained for further analysis. The analysis provided two fairly distinct factors. The factors and the item loadings on the factors are presented in Table 5.18.

The question of which set of items is most likely to be affected by a change in "to whom he is comparing himself" becomes apparent upon examining the content of the items. Items one and two require a respondent to this positive effect is not attributable to the repeated testing.

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[1] Harry H. Harman, Modern Factor Analysis (Chicago: University of Chicago Press, 1960), p. 363.

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[1] Harry H. Harman, Modern Factor Analysis (Chicago: University of Chicago Press, 1960), p. 363.

TABLE 5.18.--Factor loadings of the General Self Concept of Ability Scale items (n = 63)

Item	I	II
1. How do you rate yourself in school ability compared with your close friends?	.825*	.141
2. How do you rate yourself in school ability compared with those in your class at school?	.865*	.081
3. How do you think you would rank in your high school graduating class?	.213	.823*
4. Do you have the ability to complete college?	-.064	.859*
5. Where do you think you would rank in your class in college?	.399	.812*
6. In order to become a doctor, lawyer, or university professor, work beyond four years of college is necessary. How likely do you think it is that you could complete such advanced work?	.238	.683*
7. Forget for a moment how others grade your work. In your own opinion, how good do you think your work is?	.724*	.227
8. What kind of grades do you think you are capable of getting?	.820*	.214
Proportion of Variance	.361	.333

*Highest factor loadings of the items.

compare himself to others with whom he is presently associated. Items seven and eight ask the respondent to evaluate his own work and ability. The responses to these items would seem subject to the present experiences of the respondent. These items, then, were labeled as "immediate referent point items" which in this study is considered as synonymous with "present time oriented" items. Items three, four, five, and six all ask the respondent to project himself into the future; therefore, these items were labeled as "future time oriented" items.[1]

To determine if the referent point items could account for the change in GSCA, separate scores were derived from all nine questionnaires for each set of items. Analysis of variance was utilized to determine if changes in one set of items were different from changes occurring in the other set. Figure 5.3 shows the change in the means of the sets at the various times and Table 5.19 indicates that the difference between the trends of the two sets was significant.

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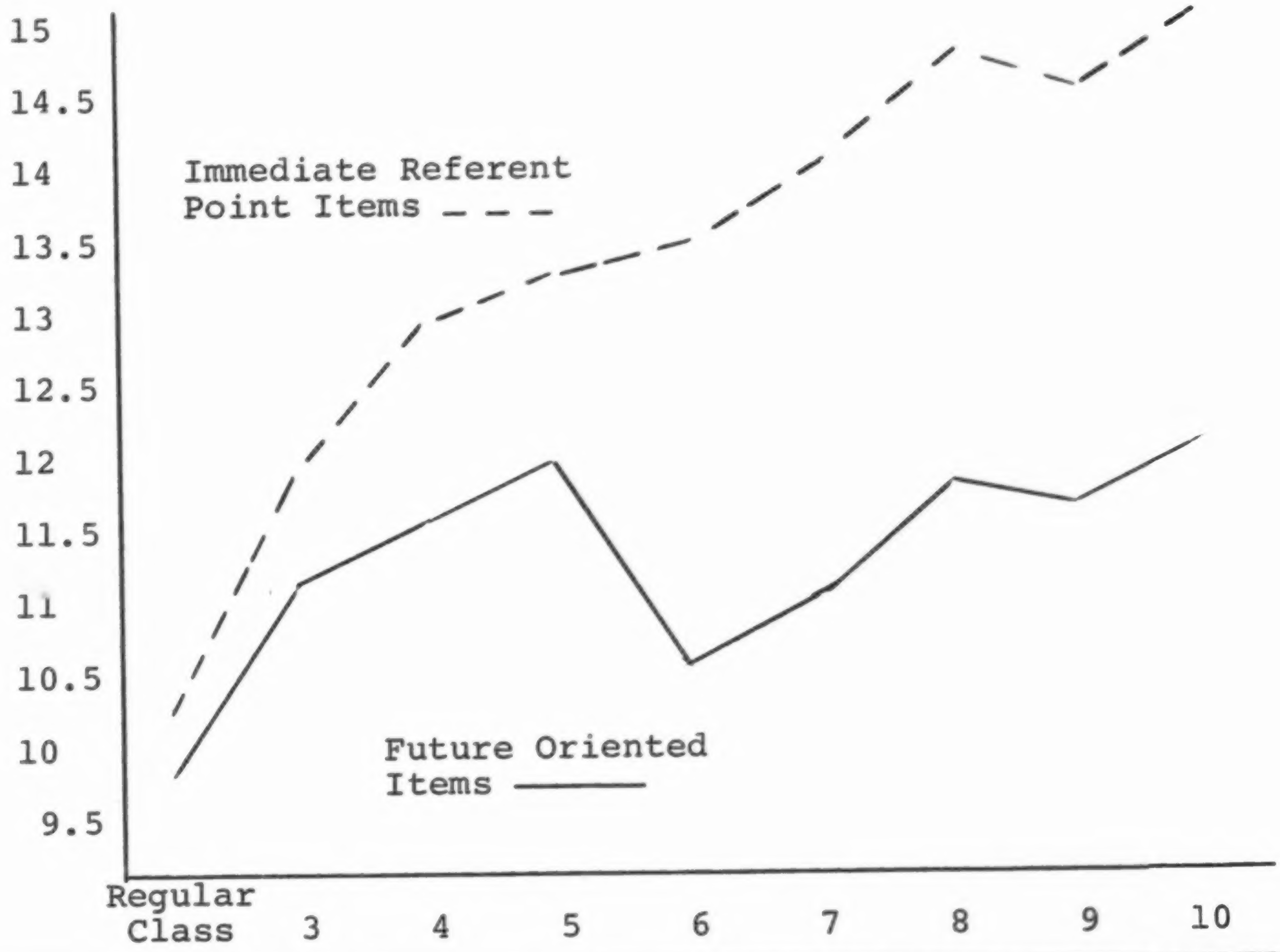
[1] The pattern of item loadings is identical to the one found by Ann Patterson, Reliability and Validity of the Self-Concept of Ability Scale, unpublished Doctoral Dissertation, Michigan State University, 1966, pp. 110-111. However, in her analyses the present time oriented factor accounted for much less of the variance and the item loadings on this factor were considerably smaller, .16 to .34, than in the current study. One reason which may account for the difference is that the factors in her study were extracted by the centroid method and were not rotated. But it seems more likely that the regular class students used in her analysis did not experience as radical a shift in the academic setting as did the EMR students.

Figure 5.3.--Changes in the means of future time oriented and immediate referent point items from June 1965 to June 1967



Time	Regular Class	3	4	5	6	7	8	9	10
Means of the Immediate Referent Point Items	10.24	11.77	13.00	13.29	13.41	13.88	14.53	14.29	14.53
Means of the Future Oriented Items	9.88	11.06	11.35	11.88	10.47	11.23	11.65	11.59	11.77

TABLE 5.19.--Analysis of variance summary table for the trend comparison of the immediate referent point items and future time oriented items.

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F	Signif- icance-
Between Subjects	1637.03	16			
Within Subjects					
Sets	320.16	1	320.16		
Subject x set	241.56	16	15.10		
Time	276.20	8	34.53		
Subject x time	1064.80	128	8.32		
Set x time	74.40	8	9.30	2.30	>.05
Subject x set x time	500.38	124	4.04		

From Figure 5.3 it can be seen that the means of the two sets were very close when the students were in the regular class, but after placement the mean of the referent point items increased while the mean of the future oriented items fluctuated a great deal. To test if change in the future oriented items was actually a random fluctuation while the increase in referent point items was a significant one, the change in each set of items was analyzed.[1] Table 5.20 shows the change in the referent point items was significant while the change in the future oriented items was not.

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[1] Winer, op. cit., p. 311.

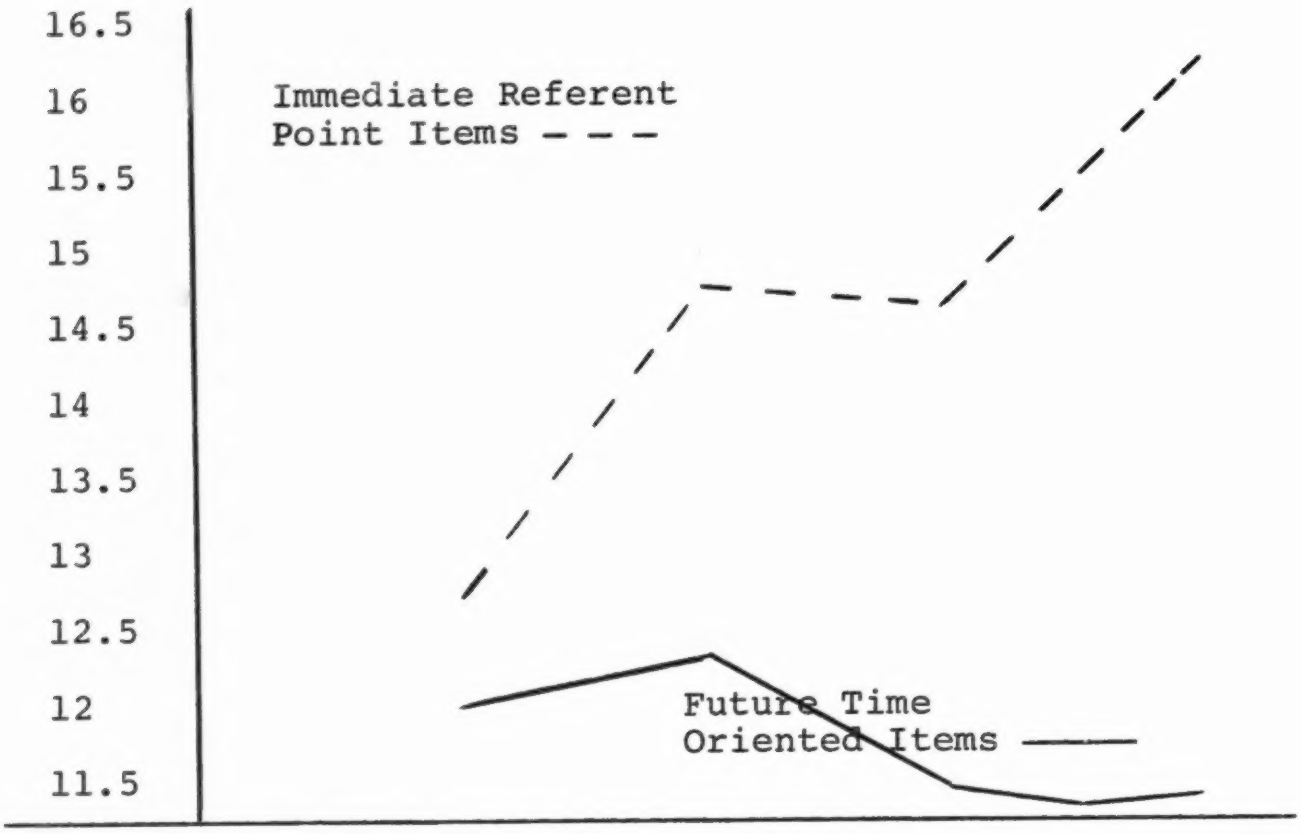
TABLE 5.20.--Analysis of variance summary table for the change in the future and present time oriented item sets.

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance
Time: Referent Items	292.02	8	36.50	9.05	>.05
Time: Future Items	58.60	8	7.33	1.82	<.05
Subject x set x time	500.38	124	4.04		

Since change in some items must occur if GSCA rises, the above results may appear redundant. That this in fact is not the case can be deduced from the following arguments. One, instead of four unrelated items accounting for the observed change, it was a set of clearly identified homogeneous items that were responsible for most of the variation. Two, the observation of this phenomena was not limited to the pre-placement longitudinal group but was also observed in the newly placed students followed in the current study.

Figure 5.4 shows the means of the two sets of items at the four 1966-1967 observation points for the newly placed sample. As was noted in pre-placement longitudinal group during the first year in a special class, an increase in the means of referent point items is found while the means of the future time oriented items decreased slightly.

Figure 5.4.--Changes on means of future time oriented and immediate referent point items from September 1966 to June 1967 for the newly placed sample



Time	1	2	3	4
Means of the Immediate Referent Point Items	12.86	14.85	14.52	16.44
Means of the Future Time Oriented Items	12.00	12.20	11.62	11.59

Although the trends of the two sets of items for the pre-placement longitudinal group and the newly placed sample differ during the first year following placement in a special class, it is of more than passing interest to compare differences among the means of the sets at the first and fourth observation points,[1] and the change in each set from the first to the fourth observation points. Table 5.21 shows the set means for the pre-placement longitudinal group and the newly placed sample at the time of placement (Time 1) and the end of the first year (Time 4). Table 5.22 shows the differences among the means. As can be seen in these tables, the directions of these differences were the same for both samples. They differed in magnitude only when the differences between the means of the referent point items at time four and time one were compared and when the differences between the means of the referent point and the future time oriented items were compared at time four. Both of these differences were the result of the greater increase in the newly placed sample's referent point means than those of the pre-placement longitudinal group, while both groups showed a similar change in scores on the future time oriented items.

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[1] Time one for the pre-placement longitudinal group was September, 1965 and time four was June, 1966. Time one for the newly placed sample was September, 1966 and time four was June, 1967.

3

TABLE 5.21.--Means of future time oriented and immediate referent point items at the end of the first year (Time 4) and immediately following placement (Time 1) for the pre-placement longitudinal and newly placed samples.

	Pre-Placement Longitudinal Group		Newly Placed Sample	
	Time 1	Time 4	Time 1	Time 4
Referent Point Items	11.79	13.41	12.86	16.44
Future Oriented Items	11.06	10.47	12.00	11.69

TABLE 5.22.--Comparison of differences among the future time oriented and immediate referent point set means immediately following placement (Time 1) and at the end of the first year (Time 4) for the pre-placement longitudinal and newly placed samples.

Comparison	Pre-Placement Longitudinal Group	Newly Placed Sample
Time 1 vs Time 4		
Referent Point Items	1.62	3.58
Future Oriented Items	-.59	-.74
Point vs Future Items		
Time 1	.73	.86
Time 4	2.94	4.85

The results from the above analyses lend credence to the notion that a particular set of items has accounted for the change in GSCA. And as these items are subject to differential responses depending on the respondent's present peers and experiences, it is likely that the increase in the EMR students' GSCA following placement is attributable to the more favorable setting of the special class in which students may anchor their self-evaluations. That is, because other special class students are exhibiting achievement more similar to the newly placed EMR student than did regular class students, when responding to the Scale following placement, the student can make more positive statements about his academic ability.

Question VI. Do EMR students answer differently when asked to respond to the GSCA Scale items in comparison to regular class students than when asked to respond to the items in comparison to special class students? This question, as the previous one, was posed to provide supplementary information concerning the referent group explanation of change in GSCA. The rationale for the question was if responses to the GSCA Scale are affected by whom the respondent compares himself, then a rise in the EMR's GSCA following placement may be the consequence of a change from regular class students to special class students as the referent group used by the student in making his academic self-evaluation. If EMR students had changed referent groups, one would expect not only a difference in the way they responded to the GSCA Scale in terms of the special class ($GSCA_{sp}$) or the regular class ($GSCA_{reg}$) but also that regular class responses would be similar to the responses made at the time of placement ($GSCA_3$), and that special class responses would be similar to those made at the end of the second year in the special class ($GSCA_{10}$).

Table 5.23 shows the $GSCA_3$, $GSCA_{10}$, $GSCA_{reg}$, and $GSCA_{sp}$ means and standard deviations. Note that the $GSCA_3$ and $GSCA_{reg}$ means were very similar, 24.27 and 24.19 respectively. Table 5.24 presents the differences between comparisons of mean GSCA scores both at times 3 and 10 and in terms of different referent groups. Note both the significant difference between the $GSCA_{reg}$ and $GSCA_{sp}$ means, and that the difference between $GSCA_{10}$ and $GSCA_{sp}$, 1.53, was less than the difference when either of these means was compared to $GSCA_3$ or $GSCA_{reg}$.

Whether or not these relationships are unique to the longitudinal sample utilized in the above analysis is partially answered in Tables 5.25 and 5.26. Table 5.25 shows that the newly placed sample responded to the Scales in a manner similar to that of the longitudinal sample: (1) there was a large difference, 5.79, between the $GSCA_{sp}$ mean and the $GSCA_{reg}$ mean; (2) there was a small difference, .22, between the $GSCA_{reg}$ mean and the GSCA mean immediately

TABLE 5.23.--Means of Responses to the GSCA **Scale** immediately following placement ($GSCA_3$) and at the end of the second year ($GSCA_{10}$) and in terms of different referent groups.

	$GSCA_{reg}$	$GSCA_3$	$GSCA_{10}$	$GSCA_{sp}$
Mean	24.19	24.27	27.03	28.76
Standard Deviation	6.30	5.61	5.67	5.29

TABLE 5.24.--Differences* in the means of responses to the GSCA Scale at times three and ten and in terms of different referent groups.

	$GSCA_{sp}$	$GSCA_{reg}$	$GSCA_3$
$GSCA_{sp}$			
$GSCA_{reg}$	4.57[1, 2]		
$GSCA_3$	4.49	-.08[1]	
$GSCA_{10}$	1.53[1]	-2.84	-2.76

*The means along the side have been subtracted from the means along the top.

[1] Differences referred to in the text.

[2] T = 7.34>.05

TABLE 5.25.--GSCA means and differences among the means for the newly placed special class EMR students.

		Differences		
	GSCA	Special	Regular	Time 7
Means		30.86	25.07	24.85
30.86	Special			
25.07	Regular	5.79[1]		
24.85	Time 7	6.01	.22[1]	
27.90	Time 10	2.96[1]	-2.83	-3.05

The means along the side have been subtracted from the means along the top.

[1] Differences referred to in the text.

TABLE 5.26.--Differences among the means for the EMR students reassigned to the regular class.

		Differences		
	GSCA	Special	Regular	Time 5
Means		27.00	20.00	24.57
27.00	Special			
20.00	Regular	7.00[1]		
24.57	Time 5	2.43[1]	-4.57	
20.57	Time 10	6.43	-.57[1]	4.00

The means along the side have been subtracted from the means along the top.

[1] Differences referred to in the text.

following placement (Time 7); and (3) the difference between the $GSCA_{sp}$ mean and the GSCA mean at the end of the first year (Time 10) in the special class, 2.96, was less than the difference when either of these means was compared to $GSCA_7$ or $GSCA_{reg}$.

The figures in Table 5.26 support the above findings in that the relationship among the EMR students reassigned to the regular classes are the reverse of those who remained in the special: (1) the difference, .57, between the $GSCA_{10}$ and $GSCA_{reg}$ means was quite small; and (2) the difference, 2.43, between the $GSCA_{sp}$ and $GSCA_5$ means was smaller than the difference when either of these means was compared to $GSCA_{10}$ or $GSCA_{reg}$. The consistency of these three findings, then, offers evidence that EMR students' change in GSCA scores is caused by their changing referent points from the regular class to the special class.

Question VII. Do differences in value orientations of teachers affect changes in special class EMR students' responses to the GSCA Scale? When teachers were categorized by an observe factor analysis of their rankings of the educational objectives, thirteen had their highest loading on Factor I while seven loaded highest on Factor II.[1] And when objectives were classified by a regular factor analysis, four factors were found the first of which was identified as the social-adjustment vs. academic type of objectives.[1] The four objectives which had their highest loading on this factor were: the development of better personal-social adjustment and the inculcation of social attitudes, a positive loading, and the acquisition of important information and the development of effective methods of thinking, a negative loading. A median test[2] of the difference between the two teacher groups' rankings of the objectives was then conducted to determine if the teacher classifications from the obverse factor analysis could be properly identified as academic vs. social-adjustment orientations.

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[1] See Appendix D.

Tables 5.27 and 5.28 show that the teachers in Group I gave significantly lower rankings than the teachers in Group II to the two objectives which appeared to be most academically oriented. And Tables 5.29 and 5.30 show that the teachers in Group II gave significantly lower rankings than teachers in Group I to the two objectives which appeared to be most social-adjustment oriented.

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[1] See Appendix A.

[2] In accordance with Siegel's (op. cit., pp. 111-116) recommendation, teachers at the median were placed in the below the median category. Also, because of the small numbers, Fisher's Exact Test was utilized.

TABLE 5.27.--Comparison of the rankings for the two sets of teachers of the objective: The acquisition of important information.

	Above Median	Below Median	n
Teachers in Group I	2	11	13
Teachers in Group II	6	1	7
			20

Median ranking = 8
Tabled significance level .01.

TABLE 5.28.--Comparison of the rankings for the two sets of teachers of the objective: The development of effective methods of thinking.

	Above Median	Below Median	n
Teachers in Group I	3	10	13
Teachers in Group II	6	1	7
			20

Median ranking = 5
Tabled significance level .025

TABLE 5.29.--Comparison of the rankings for the two sets of teachers of the objective: The development of better personal adjustment.

	Above Median	Below Median	n
Teachers in Group I	10	3	13
Teachers in Group II	0	7	7
			20

median ranking = 2
Tabled significance level .005

TABLE 5.30.--Comparison of the rankings for the two sets of teachers of the objective: The inculcation of social attitudes.

	Above Median	Below Median	n
Teachers in Group I	8	5	13
Teachers in Group II	0	7	7
			20

median ranking = 3
Tabled significance level .025

TABLE 5.31.--Responses of the two sets of teachers to the question: What proportion of time do you spend on academic subject matter?

	Above Median	Below Median	n
Social-Adjustment Oriented Teachers	3	10	13
Academically Oriented Teachers	6	1	7
median = 50% Tabled significance level .025			20

Accordingly, the value orientations of teachers in Group I were classified as social-adjustment and those in Group II were classified as academic. The concurrent validity of this classification is found in Table 5.31 which shows that teachers classified as academically oriented indicated that they spent a greater proportion of time on academic subject matter than teachers classified as social-adjustment oriented.

From the above classification, the sample of students was dichotomized on the basis of whether a student's teacher during the second year had been identified as academically or social-adjustment oriented. A further dichotomy was constructed on the basis of whether or not the student had been promoted. This procedure resulted in four groups of students: (1) students promoted into a class whose teacher was academically oriented (N = 10);

(2) students promoted into a class whose teacher was social-adjustment oriented (N = 10); (3) students remaining a second year with an academically oriented teacher (N = 11); and (4) students remaining a second year with a social-adjustment oriented teacher (N = 7). In order to provide some control for initial differences, analysis of covariance was utilized with the June 1966 GSCA scores as the covariate.

The summary of the analysis is shown in Table 5.32 and the adjusted means in Table 5.33. Of the following effects, neither teacher orientation by promotion vs. non-promotion, nor the teacher orientation by promotion vs. non-promotion interaction was statistically significant. But the results might be questionable since subsequent analysis revealed that the assumption of homogeniety of regression lines had been violated. Even though it has been suggested that if non-significance is found when the assumption is violated, it would also be found when the assumption was met,[1] the data was inspected to determine what accounted for the heterogeneity. Based on Li's[2]

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[1] Leonard S. Feldt, "A comparison of the Precision of Three Experimental Designs Employing a Concomitant Variable," Psychometrika, XXIII (December, 1958), 487-493. Also, to the writer's knowledge, the effect of non-homogeniety of the regression lines has not been studied extensively. Winer, op. cit., p. 586.

[2] Li, op. cit., pp. 370-378.

TABLE 5.32.--Analysis of covariance summary table of changes in General Self Concept of Ability scores from June 1966 to June 1967 when categorized by the teacher value orientation and promotion vs. non-promotion dichotomies (n = 38).

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance
Between Groups					
Teacher Orientation	3.70	1	3.70	.32	.57
Promotion vs. non-promotion	17.88	1	17.88	1.58	.22
Teacher orientation x promotion vs. non-promotion	.02	1	.02	.01	.97
Within groups	375.74	33	11.39		

TABLE 5.33.--Adjusted General Self Concept of Ability means from the covariance analysis.

	Socially Oriented Teachers	Academically Oriented Teachers
Not Promoted	28.51	27.16
Promoted	27.91	26.48

discussion of the similarity of analysis of covariance and the factorial design, two levels of an additional factor, above and below the median on $GSCA_6$, were added to the conceptual scheme of the analysis.

Inspection of the changes in GSCA from time 6 to time 10 revealed a slight tendency of students initially high in GSCA who had been promoted to decline and those whose GSCA had been initially low to rise. However, apparent systematic difference of the change scores was not observed in the effects of primary concern in this analysis. These observations, in addition to the analyses in Tables 5.34 and 5.36 which show there was not a significant difference in GSCA means among the four groups prior to the second year nor at the end of the second year, suggest that neither teacher orientation nor promotion had an effect on changes in GSCA.

Questions VIII and IX. Do the academic aspirations of special class EMR students change during their second year in a special class? Do the academic expectations of special class EMR students change during their second year in a special class? The above questions were asked since in the Towne and Joiner study changes in academic aspirations and expectations were considered as indices of the cooling process. To be consistent with the previous analyses, the test was whether any change in these variables occurred between March 1966 and June 1967.

TABLE 5.34.--Pre-test analysis of variance summary table for the analysis of General Self Concept of Ability differences among groups used in the teacher value Orientation Analysis (n = 38).

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance
Between Groups	8.83	3	2.94	.11	.95
Within Groups	901.06	34	26.50		

TABLE 5.35.--Pre-test (Time 6) General Self Concept of Ability means.

	Socially Oriented Teachers	Academically Oriented Teachers
Not Promoted	25.43	25.63
Promoted	26.40	26.60

TABLE 5.36.--Analysis of variance summary table for the analysis of post-test General Self Concept of Ability differences among groups used in the teacher value orientation analysis (n = 38).

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance
Between Groups					
Teacher Orientation	13.97	1	13.97	.49	.49
Promotion vs. non-promotion	.21	1	.21	.01	.93
Teacher Orientation x promotion vs. non-promotion	.02	1	.02	.01	.98
Within Groups	972.27	34	28.60		

TABLE 5.37.--Post-test (Time 10) General Self Concept of Ability means.

	Socially Oriented Teachers	Academically Oriented Teachers
Not Promoted	28.00	26.82
Promoted	28.2	26.92

Table 5.38 shows that no significant change occurred in the special class EMR students' academic aspirations, and similarly, Table 5.39 reveals no change in academic expectations. The means are found in Table 5.40.

Question X. Do changes in the special class EMR students' perception of how parents or friends evaluate their academic ability correspond to changes in GSCA? As perceived evaluation of parents (PEP) and perceived evaluation of friends (PEF) were not a central concern of this study, students were only asked to respond to the PEP and PEF Scales twice during the second year. These observations, in addition to the two collected the first year, provided four means over the two year period which could be used in the analysis. For the PEP Scale they were 16.67, 16.73, 16.65, and 16.79 respectively, and for the PEF Scale they were 15.94, 16.15, 16.07, and 16.14. As Tables 5.41 and 5.42 show, neither test of the differences among these means resulted in significance.

TABLE 5.38.--Analysis of variance summary table for the change in academic aspirations from March 1966 through June 1967 ($n = 37$).

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance
Between Subjects	323.19	36			
Within Subjects					
Time	9.50	5	1.90	.77	<.05
Error	412.33	166	2.48		

TABLE 5.39.--Analysis of variance summary table for the change in academic expectations from March 1966 through June 1967 (n = 37).

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance
Between Subjects	298.88	36			
Within Subjects					
Time	8.32	5	1.66	.83	<.05
Error	319.59	166	1.93		

TABLE 5.40.--Academic expectation and aspiration means from March 1966 through June 1967.

	March	June	Sept	Dec	March	June
Academic Aspirations	3.95	4.32	4.35	3.77	4.21	4.14
Academic Expectations	3.41	3.73	3.92	3.77	3.87	3.47

TABLE 5.41.--Analysis of variance summary table for change in Perceived Evaluation of Friends (n = 37).

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance
Between Subjects	1448.96				
Within Subjects					
Time	45.68	3	15.23	1.19	<.05
Error	1199.72	94	12.94		

TABLE 5.42.--Analysis of variance summary table for the change in Perceived Evaluation of Parents (n = 37).

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance
Between Subjects	1540.11	147			
Within Subjects					
Time	27.72	3	9.24	.75	<.05
Error	1158.91	94	12.33		

Discussion of Findings

The most clear cut finding of this research was the consistently positive effect of special class placement on the EMR children's self-concept of ability: a finding in opposition to predictions in both the first year's study and this research.

In the Towne and Joiner study it had been hypothesized that the GSCA scores of newly placed EMR students would initially drop following placement as the change to the lesser student role would necessitate a redefinition of self in terms of that role. Their findings, however, did not support the hypothesis. So for the second year, still adhering to the belief that a GSCA drop must accompany special placement, a time lag modification was incorporated in the original model, i.e., it would take longer than expected for the EMR students to realize that others defined them as failures.

The first hypothesis which predicted such a drop not only was rejected but precisely the opposite effect was observed: the change in GSCA scores over the last year and one-half was characterized by a significant increasing linear trend. Further evidence of the inadequacy of the modified model is found in the inability to accept the second research hypothesis which predicted that by the end of their second year in the special class EMR students would be more aware than they had been at the end of their first year that according to other's definitions they were academic failures. Apparently, if others are projecting such definitions, the EMR students are not perceiving it.[1]

Finally, finding that it was not the students placed in special classes but those reassigned to regular classes who exhibited a significant decreasing linear trend in GSCA scores emphasized the consistency of the overall findings. The "cooling out" model neither as originally proposed nor as modified predicted changes in GSCA. Instead, all the findings of this research indicate that placing EMR students in special classes can be expected to have a positive effect on those students' GSCA.

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[1] Of course, it could be argued that the students merely are not reporting such perceptions. There is no way of knowing here whether the change is true. But it can be said that, in general (in the vast majority of cases) interviewers felt respondents were comfortable, not threatened, and open in their replies to queries.

Assuming that change in GSCA has its roots in social interaction, two explanations for the rise in GSCA might be advanced:[1] (1) the EMR may have more positively perceived the evaluations of significant others; or (2) a change to a frame of reference more conducive to positive evaluation may have taken place.

Based on the data gathered here, the most tenable explanation of the increase in GSCA is that the EMR students have changed referent groups[2] from the regular class to the special class in making their self evaluations. Contrary to the research by Brookover and associates with regular class students, not once did the findings in this study suggest that the observed change in GSCA could be accounted for by the EMR's having internalized more positive attitudes of significant others.[3] On the other hand, every time the referent point explanation was explored, findings suggested a relationship. Both question five concerning the set of items which accounted for the GSCA change and question six which asked the EMR students to respond to the GSCA Scale by comparing themselves either to regular or special classmates supported the referent group explanation. In question five it was demonstrated that most of the positive change in GSCA could be accounted for by items loading on a present time oriented factor; essentially, this means changes occurred on items where respondents used immediate classmates and experiences as a basis for their self evaluations. And analysis of question six revealed that EMR responses to the GSCA Scale when comparing themselves to regular class students were quite similar to their GSCA scores immediately following placement while responses to the GSCA Scale when comparing themselves to special class students were similar to the GSCA Scale responses at the end of the second year in the special class. The comparisons argue strongly that a change in referent points took place following placement in a special class.

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[1] See pp. 29-30.

[2] See footnote on pages 30-31.

[3] This does not mean that others in reciprocal role relationships have not changed in their evaluations of the EMR students' academic ability nor that a change in the perceived evaluation of some other "academic significant other" might in part have accounted for the change in GSCA but only that the perceived evaluation, probably the most significant aspect, of persons in the major reciprocal roles did not show a change corresponding to the one observed in GSCA. And that the evidence reported herein strongly supports the notion that the EMR students have changed referent groups in making their self-evaluations and have not internalized the attitudes of some significant other.

Analysis of Hypothesis IV, on the other hand, revealed a negative relationship between affective orientation to the special class and change in GSCA. In this instance, it had been hypothesized that if GSCA fell during the second year, the EMR's class preference would shift toward the regular class. Although the hypothesized shift in affective orientation was noted, since GSCA scores increased rather then decreased, a negative relationship was found between GSCA and affective orientation. Apparently, even though EMR students' feelings about the special class are less positive after their second year in the class, when comparing themselves to others in the class their GSCA scores rise. In interpreting this negative relationship in terms of reference group theory, it might be that some of the EMR students have internalized others' negative definitions of the special class (a normative referent function) which when they are asked to evaluate their ability as a student in comparison to that class (a comparative referent function) acts to enhance their self evaluations.

Discussion of Limitations

In addition to confirming Towne and Joiner's findings of the positive effect of special class placement on the academic self-concept of the EMR, this study has offered some credence to their methodology and some generalizability of their findings. Among the most restrictive limitations of the first year's study were: the use of different interviewers, the repeated utilization of the same instruments, the lack of random selection, and the absence of a control group.

The evidence provided herein indicates that differences in EMR responses to the GSCA Scale were not attributable to an interviewer effect. It is not claimed that some interviewer might elicit different responses than another interviewer, but only that this effect did not operate systematically in the current study. The findings also suggest that there was no repeated testing effect. In ascertaining the existence of this effect over the first year it would have been desirable to have a third group for comparative purposes: one which would have been interviewed only the final period during the second year (June 1967), rather than using the group which had also been tested the second time (December 1966). However, in addition to the other findings, as there was a smaller increase, .58, in the GSCA mean of the group tested every time than in the group tested only at the second and final periods, 1.41, it seems unlikely that continued testing could have accounted for the increase in GSCA.

The limited generality of Towne and Joiner's findings because of their inability to randomly select students, while still a problem, has been shown to be less of a limitation. The observed increase in GSCA of the newly placed special class EMR students followed in this study at least extends the generality of their findings beyond the particular sample utilized in their study. Finally, while in the strictest sense a control group was not utilized in the current study, the students who were reassigned to regular classes provided a contrast which may be even more important than the traditional control vs. experimental comparisons. The fact that the GSCA dropped for every single student reassigned to the regular class refutes the notion that GSCA scores generally rise from September to March or June and, in addition, that repeated testing has accounted for the rise.

Although the above limitations have been shown to be less tenable as alternative explanations of both the first and second years' results, still several limitations remain. As occurs in many longitudinal studies, a portion of the sample was lost and the extent to which this loss affects the outcomes of the study is unknown. In addition, it would have been better if a larger sample could have been utilized. This is particularly true regarding those questions aimed at ascertaining the repeated testing effect, the effect of reassignment of special education EMR students to regular classes, the effect of teacher value orientation on GSCA, and the newly placed sample which provided a replication of the first year's findings.

Other limitations include:

(1) reliance on brief answers to open ended questions which were recorded without intensive probing;

(2) the interview times were not precisely at three month intervals as scheduling problems necessitated variations up to two weeks from a desired date; and

(3) missing observations were estimated.

CHAPTER VI

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

Summary

As the second stage of a research program designed to study selected socially determined intervening variables which may affect the academic performance of EMR students, this research proposes:

(1) to investigate change in the General Self-Concept of Ability (GSCA) of second year EMR special class students;

(2) to refine the initial study's attempt to understand how certain conditions associated with special class placement effect change in General Self-Concept of Ability (GSCA).

Specifically, it focuses on two problems:

(1) Does the initial positive effect of special class placement on the EMR's academic self-concept decline during the second year in a special class?

(2) What conditions associated with the special class account for the change in the EMR's academic self-concept?

To investigate these problems the following hypotheses were tested:

Hypothesis I. Change in the academic self-concept of special class EMR students will be characterized by a descending linear trend from March 1966 to June 1967.

Hypothesis II. Special class EMR students will mention more derogatory comments about their class in June 1967 than in June 1966.

Hypothesis III. Teachers' evaluations of special class EMR students' academic ability will be perceived more positively by those students in March 1966 than in June 1967.

Hypothesis IV. Special class EMR students will make more unfavorable comments about the special class in June 1967 than in June 1966.

In addition, ten questions were investigated. The first three are methodological in nature, the next four are related to the hypotheses, and the final three are general.

(1) Did repeated interviewing affect responses to the GSCA Scale during the first year of the study?

(2) Did repeated interviewing affect responses to the GSCA Scale during the second year of study?

(3) Did different interviewers elicit different responses to the GSCA Scale?

(4) What happens to the GSCA scores of special class EMR students who have been reassigned to regular classes?

(5) Is there a particular set of items which account for the observed change in GSCA scores?

(6) Do special class EMR students answer differently when asked to respond to the GSCA Scale items in terms of regular class students than when asked to respond to the items in terms of special class students?

(7) Do differences in value orientations of teachers affect changes in special class EMR students' responses to the GSCA Scale?

(8) Do the academic aspirations of special class EMR students change during their second year in a special class?

(9) Do the academic expectations of special class EMR students change during their second year in a special class?

(10) Do changes in the special class EMR students' perception of how parents or friends evaluate their academic ability correspond to changes in GSCA?

For various reasons only 51 of the first year's 62 subjects could be followed during this, the second year of the study. In addition, 14 newly placed EMR students were added to examine repeated testing effects. There was no reason to believe either of these groups differed systematically from the original sample.

While the time series design of the original study was retained, i.e., four equally spaced observations, unlike Towne and Joiner's effort, findings here are interpreted only in terms of positive or negative relationships, not in terms of antecedents and consequences. Data were analyzed by using: (1) a test for trend involving repeated measures on the same subjects; (2) standard correlational procedures; and (3) various nonparametric techniques. In addition to the Brookover instrument used in the first study, a teacher questionnaire was administered.

The testings of the four hypotheses resulted in the following specific findings:

Hypothesis I. The linear trend of EMRs' GSCA scores over the last year and one-half of their second year in the special class proved to be significant. But instead of descending as predicted, it rose over the year and one-half period.

Hypothesis II. At the end of their second year in a special class, EMR students did not mention a significantly greater number of derogatory comments made by others about their class than they did at the end of the first year.

Hypothesis III. At the end of their second year in a special class, EMR students' perceived teacher evaluation of their academic ability was not significantly more positive than near the end of their first year.

Hypothesis IV. At the end of their second year in a special class, EMR students made significantly more unfavorable comments about the class than they did at the end of their first year.

The findings relevant to the questions may be summarized as follows:

(1) Change in GSCA scores over the first year of special class placement was not affected by repeated testing.

(2) Change in GSCA scores over the second year of special class placement was not affected by repeated testing.

(3) Change in GSCA scores was not associated with change in interviewers.

(4) The GSCA scores of EMR students reassigned to regular classes demonstrate a significant descending linear trend over their first year in the regular class.

(5) Within the GSCA Scale four items loading on a present time oriented factor account for the rise in GSCA scores associated with EMR special class placement.

(6) a. When asked to compare themselves to regular class members, EMRs' responses to the GSCA Scale are similar to their GSCA responses immediately following placement.

b. When asked to compare themselves only to other special class members, EMR responses to the GSCA Scale are similar to their GSCA responses at the end of their second year in the special class.

(7) Different teacher orientations, social-adjustment vs. academic, are not associated with changes in special class EMR students' responses to the GSCA Scale.

(8) During their second year in the special class, EMR students demonstrate no significant change in academic aspirations.

(9) During their second year in the special class, EMR students demonstrate no significant change in academic expectations.

(10) a. Perceived evaluations of friends do not correspond to changes in GSCA.

b. Perceived evaluations of parents do not correspond to change in GSCA.

Conclusions

Based on the previously summarized findings, the following conclusions are made:

(1) GSCA scores of EMR students exhibit an increasing linear trend over the last year and one-half of their first two years following placement in a special class. These data, however, do not support the a priori modified self re-definition model as GSCA scores rose over this period rather than declined.

(2) During the second year in the special class, EMR students do not increase in their awareness that according to others' definitions they are failures as students.

(3) EMR students during their second year in a special class shift toward a more negative affective orientation toward their class.

(4) Changes in EMRs' perceived evaluation of parents, friends, and teachers do not correspond to changes in GSCA.

(5) EMRs' academic aspirations and expectations do not change from a time half way through their first year in a special class through the end of their second year.

(6) Neither teacher value orientations nor student promotion affects changes in GSCA.

(7) Neither repeated interviewing nor the employment of different interviewers affects EMR responses to the GSCA Scale.

(8) Change in the GSCA of EMR students following special class placement is primarily the result of self comparison with special class peers and not largely a product of internalizing the attitudes of others.

Implications

The major implications of this research are centered around one question. If one assumes the generality of positive effect of special class placement on the EMRs' GSCA, why have not studies of special class EMR students found enhanced academic performance?[1] The following discussion points to several explanations and the kinds of research needed before this question can be satisfactorily answered.

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[1] With academic achievement a central concern in this research, indices of change in that variable would immeasurably enhance findings. Unfortunately, no satisfactory indice could be found.

On one hand, perhaps, with an EMR population, Brookover's Scale is not as valid an index of academic self-concept as it is with a normal population. Two findings of the present research raise this possibility. One, GSCA scores of EMR students rose while no significant change in perceived evaluations of either teachers, parents, or friends occurred. In Brookover's research with regular class students, findings which indicated corresponding changes between the GSCA and the perceived evaluation of others not only provided evidence of necessary and sufficient relationship of changes in the constructs, but also lent credence to the validity of the scales assessing the constructs. Two, EMR students do not respond to the GSCA Scale as a set of homogeneous items. In contrast, when Brookover and his associates assessed the Scales internal consistency using Guttman scaling procedures, Hoyt's Analysis of variance and factor analysis,[1] the homogeneous nature of the Scale with regular class students was consistently confirmed. The former finding questions the empirical validity and the latter the content validity of the Scale when used with EMR populations.[1]

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[1] Patterson, op. cit., did find an immediate time factor, but in her analysis it was barely significant.

On the other hand, two other arguments should be considered. One, it may be that not the validity of the Scale is in question, but the theoretical propositions regarding the change in GSCA. Instead of conceptualizing the Scale and its underlying theory solely in terms of a normative referent function, the propositions may need to be modified to take the comparative function into account; change in perceived evaluation of others may be a sufficient condition for change in self-concept of ability, but not a necessary one.

Two, an increase in GSCA is not a sufficient condition for improved academic performance. Brookover does not refer to academic self-concept as an antecedent to learning, only that it operates as a functional limit to what a student will learn. By this he means a student may have a high self-concept, but not achieve because he is neither motivated nor perceives that others expect him to achieve. In view of the finding that the teacher value orientation was not related to change in GSCA, particularly that an academic oriented teacher does not have a negative effect on GSCA, the above point becomes crucial. This means that special class placement may have a positive effect on the EMRs' GSCA but a corresponding increase in achievement need not take place if the special class teacher does not gear the learning experiences at a high enough level and motivate the student to learn.

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[1] G. C. Helmstadter, Principles of Psychological Measurement (New York: Appleton-Century-Crofts, 1964), pp. 87-131.

The above discussion was not inteded to explain why there has not been an increase in academic performance if special class placement in general has a positive effect on GSCA, but only to suggest lines of future research. Four kinds of research have been suggested. One, additional instrumentation studies to enlarge understanding of the Scale's characteristics with an EMR population and other differentiated groups are needed. Two, it is imperative that the relationship between GSCA and achievement be studied in special education EMR students and other differentiated groups. Three, further research is needed to investigate the possibility of extending Brookover's theoretical propositions to account for the EMRs' change in GSCA. And finally, in line with Johnson's claim of the non-academically oriented special class teacher, both correlational and experimental research should be conducted to determine the effects of teacher value orientation and practices on the learning of EMR students.

Other implications of this research are relevant to explaining both studies which have noted that the length of time in the special class is unrelated to self-concept and those which suggested EMR students have unrealistic self-concepts. Results of the former studies seemingly have indicated that because the self-concept is not greater for students who have been in the special class for a longer period of time, the special class may not be beneficial in providing the EMR student with an enhanced definition of self. Limited by what the instrument utilized in this study has in common with those employed in other studies, the results reported herein suggest since the major enhancement of self occurs during the first year in the special class, studies that contrast the self-concept of EMR students who have been in the special class only a year or more are not likely to discover positive differences in self according to the time spent in a special class, particularly if their techniques were less precise than those used herein.

Evidence that EMR students following placement in a special class do change referent groups in responding to items which require them to compare themselves to others may explain why EMR students appear to have "unrealistic" self-concepts. However, the results of this study have raised the question of whether responses to such items are properly denoted as unrealistic. In this study, items which might indicate that special class placement results in unrealistic self-concepts, i.e., comparing themselves to others in terms of rankings in the high school graduation class and college, and the likelihood of graduating from college and doing advanced work, did not significantly change following placement in a special class. It is only to the extent that one considers favorable comparisons to other special class students as unhealthy that special class placement resulted in "unrealistic" self-concepts. However, further evidence substantiating this phenomena is necessary.

Finally, the increase in the number of students from the end of the first year to the second who indicated they would rather be in a regular class and did not like the special class needs explaining. Even though the social setting surrounding the special class neither had a detrimental effect on the EMR students' academic self-concept nor on their perceptions of the teacher, some process has operated which appears to result in at least some students devaluating the special class during the second year following placement. As it may be that such a devaluation could result in a lack of motivation, the ingredients of this process need to be explored, so that the total setting of the special class can be altered in a manner which is conducive to achievement. Then another step may be taken toward fulfilling the common sense promise of special placement.

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APPENDIX A

INSTRUMENTS: PRETEST EXERCISE
GENERAL SELF CONCEPT OF ABILITY SCALE
EDUCATIONAL ASPIRATIONS SCALE
EDUCATIONAL EXPECTATIONS SCALE
ATTITUDE SURVEY
SPECIAL CLASS GSCA SCALE
REGULAR CLASS GSCA SCALE
ACADEMIC SIGNIFICANT OTHERS QUESTIONNAIRE
EDUCATIONAL OBJECTIVES RANKED BY TEACHERS
PERCEIVED EVALUATION OF PARENTS SCALE
PERCEIVED EVALUATION OF FRIENDS SCALE
PERCEIVED EVALUATION OF TEACHERS SCALE

PRETEST EXERCISE

Circle the best answer.

How do you rate yourself in height compared with your close friends?

Among the tallest
Above average
Average
Below average
Among the shortest

How do you rate yourself in weight compared with those in your class at school?

Among the heaviest
Above average
Average
Below average
Among the lightest

Where do you think you would rank in your class as a runner?

Among the best
Above average
Average
Below average
Among the poorest

In your opinion, how good a jumper do you think you are?

Excellent
Good
Average
Below average
Much below average

In your opinion, how good a singer do you think you are?

Excellent
Good
Average
Below average
Much below average

Do you think you have the ability to throw a ball as high as the school?

Yes, definitely
Yes, probably
Not sure either way
Probably not
No

How likely do you think it is that you will learn to drive a car?

Very likely
Somewhat likely
Not sure either way
Unlikely
Most unlikely

How likely do you think it is that you will someday ride in an airplane?

Very likely
Somewhat likely
Not sure either way
Unlikely
Most unlikely

How likely do you think it is that you will someday buy a real airplane?

Very likely
Somewhat likely
Not sure either way
Unlikely
Most unlikely

How do you rate yourself as a swimmer compared with those in your class at school?

Among the best
Above average
Average
Below average
Among the poorest

Where do you think you would rank in your class in spelling?

Among the best
Above average
Average
Below average
Among the poorest

Brookover's General Self Concept of Ability Scale

How do you rate yourself in school ability compared with your close friends?

The best
Above average
Average
Below average
Poorest

How do you rate yourself in school ability compared with those in your class at school?

The best
Above average
Average
Below average
Poorest

How do you think you would rank in your high school graduating class?

The best
Above average
Average
Below average
Poorest

Do you think you have the ability to complete college?

Yes, definitely
Yes, probably
Not sure either way
Probably not
No

Where do you think you would rank in your class in college?

The best
Above average
Average
Below average
Poorest

In order to become a doctor, lawyer, or university professor, work beyond four years of college is necessary. How likely do you think it is that you could complete such advanced work?

Very likely
Somewhat likely
Not sure either way
Unlikely
Most unlikely

Forget for a moment how others grade your work. In your own opinion, how good do you think your work is?

Excellent
Good
Average
Below average
Much below average

What kind of grades do you think you are capable of getting?

Mostly A's
Mostly B's
Mostly C's
Mostly D's
Mostly F's

EDUCATIONAL ASPIRATIONS

If you were free to go as far as you wanted to go in school, how far would you like to go?

a. Quit right now.
b. Go to high school for a while.
c. Graduate from high school.
d. Go to secretarial or trade school.
e. Go to college for a while.
f. Graduate from College.
g. Do graduate work beyond college.

EDUCATIONAL EXPECTATIONS

Sometimes what we would like to do isn't the same as what we expect to do. How far in school do you expect you really will go?

a. I think I really will quit school as soon as I can.
b. I think I really will continue in high school for a while.
c. I think I really will graduate from high school.
d. I think I really will go to secretarial or trade school.
e. I think I really will go to college for a while.
f. I think I really will graduate from college.
g. I think I really will do graduate work beyond college.

ATTITUDE SURVEY

The following questions ask how you feel about this class. Nobody in the school will be told your answers.

1. What class are you in?

2. What do you call your class?

3. What do other kids in your room call this class?

4. What do kids from other rooms call your class?

5. How do you like this class? Why?

6. Would you rather be in this class or a regular class? Why?

SPECIAL CLASS GSCA SCALE

1. How do you rate yourself in school ability compared with your close friends in the special class?

   a. I am the best
   b. I am above average
   c. I am average
   d. I am below average
   e. I am the poorest

2. How do you rate yourself in school ability compared with all of the students who are in the special class?

   a. I am the best
   b. I am above average
   c. I am average
   d. I am below average
   e. I am the poorest

3. Where do you think you would rank in your high school graduating class if you were in a school which only had special education students?

   a. among the best
   b. above average
   c. average
   d. below average
   e. among the poorest

4. Do you think you could graduate from a college for special education students?

   a. yes, definitely
   b. yes, probably
   c. not sure either way
   d. probably not
   e. no

5. Where do you think you would rank in your class in a college for special education students?

   a. among the best
   b. above average
   c. average
   d. below average
   e. among the poorest

6. In order to become a doctor, lawyer, or university professor, work beyond four years of college is necessary. Compared to other special class students, how likely do you think it is that you could complete such advanced work?

   a. very likely
   b. somewhat likely
   c. not sure either way
   d. unlikely
   e. most unlikely

7. Forget for a moment how others grade your work. In your own opinions, how good do you think your work is compared with other special education students?

   a. My work is excellent
   b. My work is good
   c. My work is average
   d. My work is below average
   e. My work is much below average

8. In a special education class, what kind of grades do you think you are capable of getting?

   a. Mostly A's
   b. Mostly B's
   c. Mostly C's
   d. Mostly D's
   e. Mostly F's

REGULAR CLASS GSCA SCALE

1. How do you rate yourself in school ability compared with your close friends who are not in the special class?

    a. I am the best
    b. I am above average
    c. I am average
    d. I am below average
    e. I am the poorest

2. How do you rate yourself in school ability compared with students your age who are not in the special class?

    a. I am among the best
    b. I am above average
    c. I am average
    d. I am below average
    e. I am among the poorest

3. Where do you think you would rank in your high school graduating class if you were in a school which had no other special education students?

    a. among the best
    b. above average
    c. average
    d. below average
    e. among the poorest

4. Do you think you could graduate from a college which had no other special education students?

    a. yes, definitely
    b. yes, probably
    c. not sure either way
    d. probably not
    e. no

5. Where do you think you would rank in your class in a college which had no other special education students?

    a. among the best
    b. above average
    c. average
    d. below average
    e. among the poorest

6. In order to become a doctor, lawyer, or university professor, work beyond four years of college is necessary. Compared to regular class students, how likely do you think it is you will complete such advanced work?

   a. very likely
   b. somewhat likely
   c. not sure either way
   d. unlikely
   e. most unlikely

7. Forget for a moment how others grade your work. In your own opinion, how good do you think your work is compared with students not in the special class?

   a. My work is excellent
   b. My work is good
   c. My work is average
   d. My work is below average
   e. My work is much below average

8. In a regular class, what kind of grades do you think you are capable of getting?

   a. Mostly A's
   b. Mostly B's
   c. Mostly C's
   d. Mostly D's
   e. Mostly F's

ACADEMIC SIGNIFICANT OTHERS

There are many people who are concerned about how well young people do in school. Who are the people you feel are concerned about how well you do in school. Please tell who each person is.

NAMES	WHO IS THIS PERSON?

EDUCATIONAL OBJECTIVES RANKED BY TEACHERS

Please rank the following statements of educational objectives in order from 1 to 10. Assign number 1 to the objective you feel is most important in your teaching and number 10 to the objective you feel is least important.

1.____The acquisition of important information.

2.____The development of effective methods of thinking.

3.____The development of increased appreciation of music, art, literature, and other aesthetic experiences.

4.____The development of social skills.

5.____The acquisition of a wide range of significant interests.

6.____The development of better personal-social adjustment.

7.____The development of physical health.

8.____The inculcation of social attitudes.

9.____The cultivation of useful work habits and study skills.

10.____The development of a consistent philosophy of life.

PERCEIVED EVALUATION OF PARENTS SCALE

1. How do you think your PARENTS would rate your school ability compared with other students your age?

   a. Among the best
   b. Above average
   c. Average
   d. Below average
   e. Among the poorest

2. Where do you think your PARENTS would say you would rank in your high school graduating class?

   a. Among the best
   b. Above average
   c. Average
   d. Below average
   e. Among the poorest

3. Do you think that your PARENTS would say you have the ability to complete college?

   a. Yes, definitely
   b. Yes, probably
   c. Not sure either way
   d. Probably not
   e. Definitely not

4. In order to become a doctor, lawyer, or university professor, work beyond four years of college is necessary. How likely do you think your PARENTS would say it is that you could complete such advanced work?

   a. Very likely
   b. Somewhat likely
   c. Not sure either way
   d. Unlikely
   e. Most unlikely

5. What kind of grades do you think your PARENTS would say you are capable of getting in general?

   a. Mostly A's
   b. Mostly B's
   c. Mostly C's
   d. Mostly D's
   e. Mostly F's

PERCEIVED EVALUATION OF FRIENDS SCALE

1. How do you think this FRIEND would rate your school ability compared with other students your age?

   a. Among the best
   b. Above average
   c. Average
   d. Below average
   e. Among the poorest

2. Where do you think this FRIEND would say you would rank in your high school graduating class?

   a. Among the best
   b. Above average
   c. Average
   d. Below average
   e. Among the poorest

3. Do you think that this FRIEND would say you have the ability to complete college?

   a. Yes, definitely
   b. Yes, probably
   c. Not sure either way
   d. Probably not
   e. Definitely not

4. In order to become a doctor, lawyer, or university professor, work beyond four years of college is necessary. How likely do you think this FRIEND would say it is that you could complete such advanced work?

   a. Very likely
   b. Somewhat likely
   c. Not sure either way
   d. Somewhat unlikely
   e. Very unlikely

5. What kind of grades do you think this FRIEND would say you are capable of getting?

   a. Mostly A's
   b. Mostly B's
   c. Mostly C's
   d. Mostly D's
   e. Mostly F's

PERCEIVED EVALUATION OF TEACHERS SCALE

1. How do you think this TEACHER would rate your school ability compared with other students your age?

   a. Among the best
   b. Above average
   c. Average
   d. Below average
   e. Among the poorest

2. Where do you think this TEACHER would say you would rank in your high school graduating class?

   a. Among the best
   b. Above average
   c. Average
   d. Below average
   e. Among the poorest

3. Do you think that this TEACHER would say you have the ability to complete college?

   a. Yes, definitely
   b. Yes, probably
   c. Not sure either way
   d. Probably not
   e. Definitely not

4. In order to become a doctor, lawyer, or university professor, work beyond four years of college is necessary. How likely do you think this TEACHER would say it is that you could complete such advanced work?

   a. Very likely
   b. Somewhat likely
   c. Not sure either way
   d. Somewhat unlikely
   e. Very unlikely

5. What kind of grades do you think this TEACHER would say you are capable of getting in general?

   a. Mostly A's
   b. Mostly B's
   c. Mostly C's
   d. Mostly D's
   e. Mostly F's

APPENDIX B

MICHIGAN PLACEMENT RECOMMENDATIONS FOR THE EMR

Michigan Placement Recommendations for EMR

1. Diagnostic

   Educational programs providing for all types of mentally handicapped children must be based on a sound diagnostic study. Each child, to be eligible for specific program placement, must be diagnosed as being educable mentally handicapped or trainable mentally handicapped by an approved school diagnostician.

2. Educational

   (a) Once diagnosed as mentally handicapped, placement in a particular program must be determined by a screening committee within the district of the child's residence. This committee should be composed of the diagnostician, the child's principal and teacher, the special classroom teacher and other appropriate professional or school personnel.

   (b) Rule 1. A pupil shall be considered enrolled as a member of the program under this Act, as determined through adequate diagnostic study, if (a) he is mentally handicapped and potentially socially competent, (b) he is mentally handicapped but prognosis is such that he may appear neither academically educable nor potentially socially competent but who may with training become at least partially self-supporting.

   (Page 240 of the 1956 Annual Supplement to the 1954 Administrative Code)

   (c) Rule 2. Qualifications of persons providing diagnostic services under this Act must be approved by the Superintendent of Public Instruction.

   (d) Rule 3. Qualifications of persons providing consultant service under this Act must be approved by the Superintendent of Public Instruction.

APPENDIX C

COOPERATING SCHOOL DISTRICTS

DISTRICT	NAME*
A	BENDLE PUBLIC SCHOOLS
B	DEARBORN PUBLIC SCHOOLS
C	KEARSLEY COMMUNITY SCHOOLS
D	LIVONIA PUBLIC SCHOOLS
E	MONTCALM COUNTY PUBLIC SCHOOLS
F	OWOSSO PUBLIC SCHOOLS**
G	DURAND PUBLIC SCHOOLS**

*All districts located in Michigan

**Part of the Shiawassee county intermediate school district.

APPENDIX D

STATISTICAL ANALYSES

Predictor Regression Weights

Self-Concept

R	Constant	Time 7	Time 8	Time 9	Time 10	Spec.	Reg.
.79	3.45	dep	.25	.04	.52		
.74	7.37	.26	dep	.22	.27		
.80	4.87	.03	.19	dep	.55		
.87	3.36	.16	.17	.16	dep		
.69	9.71	-.09	.10	.16	.52	dep	
.87	-3.04	.18	.05	.66	.15		dep

Perceived Evaluation of Parents

R	Constant	Time 7	Time 9	Time 3	Time 5
.83	-1.03	dep	.30	.21	.57
.79	2.39	.28	dep	.26	.31

Perceived Evaluation of Teachers

R	Constant	Time 7	Time 9	Time 3	Time 5
.77	2.79	dep	.70	-.03	.23
.81	-0.05	.51	dep	.27	.14

Perceived Evaluation of Friends

R	Constant	Time 7	Time 9	Time 3	Time 5
.78	1.24	dep	.59	.38	-.04
.85	1.14	.34	dep	.11	.51

Academic Aspirations

R	Constant	Time 7	Time 8	Time 9	Time 10
.44	1.45	dep	.43	.38	-.38
.53	1.91	.33	dep	-.25	.55
.61	1.60	.25	-.21	dep	.64
.67	0.83	-.20	.38	.53	dep

Academic Expectations

R	Constant	Time 7	Time 8	Time 9	Time 10
.65	0.99	dep	.67	.24	-.28
.88	-0.17	.25	dep	.13	.74
.78	0.78	.15	.22	dep	.56
.87	0.45	.08	.58	.25	dep

ROTATED FACTOR* LOADINGS OF THE TEACHER BY TEACHER MATRIX

	1	2	3	4	5
1	0.9301	0.0824	0.2699	0.1056	-0.1588
2	0.5505	0.6043	0.5248	-0.0455	-0.2330
3	-0.2105	0.8492	0.0292	-0.1461	0.1969
4	0.3969	0.1475	0.7297	-0.1827	-0.4627
5	0.9017	-0.1579	0.2698	-0.2572	-0.0452
6	0.9368	-0.0962	-0.0039	0.0138	-0.1975
7	0.6285	0.2699	0.3268	-0.2889	-0.5618
8	0.3743	-0.3165	-0.0524	0.1378	-0.7448
9	0.6943	-0.0280	0.3651	0.1939	-0.4553
10	0.2725	-0.0228	0.9057	0.1462	-0.0605
11	-0.0055	0.9061	0.2422	0.0677	-0.2028
12	0.8476	-0.1481	-0.0926	-0.1901	-0.1515
13	0.6210	0.2823	0.1684	0.0474	-0.6185
14	0.3062	0.2569	0.3151	0.0634	-0.8399
15	-0.1002	0.0481	0.6580	0.2672	-0.0230
16	0.1225	0.2166	0.2296	0.9054	0.0084
17	-0.4087	0.0831	0.1634	0.7973	-0.2373
18	0.1287	0.0903	0.8942	0.0334	-0.3643
19	0.0298	0.7724	-0.1578	0.2858	-0.4284
20	-0.0973	0.8358	0.0333	0.3615	-0.1018

*Only factors with eigen values greater than one have been included.

ROTATED FACTOR* LOADINGS OF THE ITEM BY ITEM MATRIX

	1	2	3	4
1	-0.7783	-0.3182	-0.1456	-0.1311
2	-0.8454	-0.0283	0.3018	-0.0921
3	0.0010	0.2414	0.0631	-0.8568
4	-0.0031	0.5024	0.0286	0.7185
5	0.2520	-0.1774	-0.9183	0.0116
6	0.8975	-0.0997	0.0318	-0.0386
7	-0.0491	-0.7568	-0.0076	0.0118
8	0.5743	0.3046	-0.0556	-0.1654
9	0.2417	-0.4738	0.7140	-0.0367
10	0.2984	0.6290	-0.0490	-0.0241

*Only factors with eigen values greater than one have been included.